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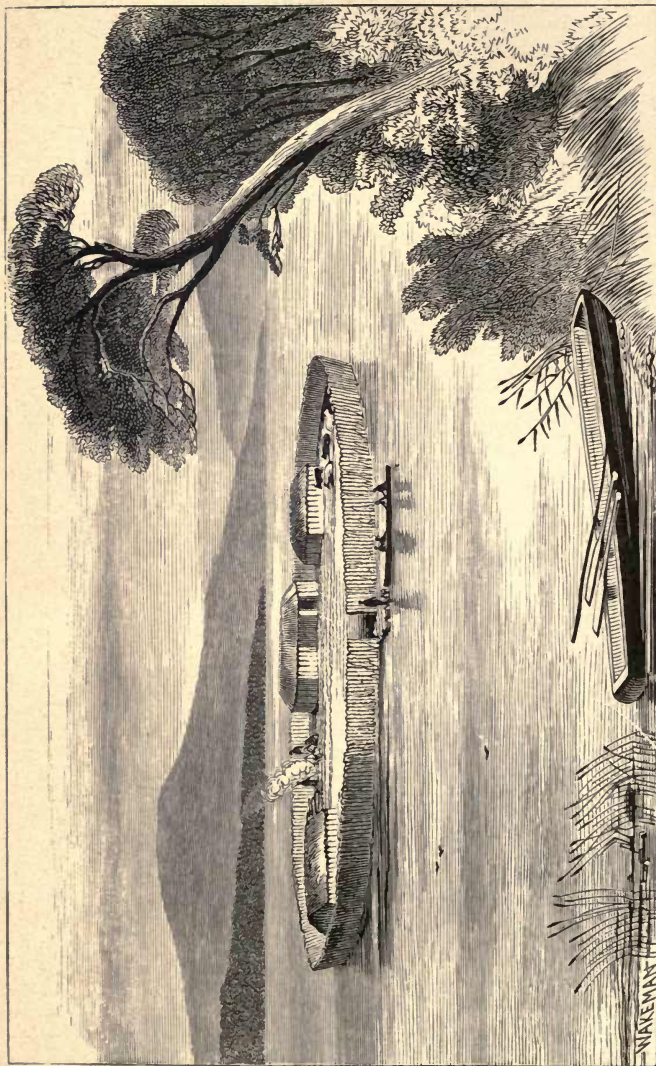
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THE
LAKE DWELLINGS
OF
IRELAND.



IRISH LAKE DWELLING OF THE ISOLATED TYPE.

Ideally restored from inspection of numerous sites.

THE LAKE DWELLINGS

OF
IRELAND:

OR ANCIENT
LACUSTRINE HABITATIONS OF ERIN,
COMMONLY CALLED CRANNOGS.

BY
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"History of Sligo, from the Earliest Ages to the close of the Reign of Queen Elizabeth."

"There, driving many an oaken stake
Into the shallow, skilful hands
A steadfast island-dwelling make,
Seen from the hill-tops like a fleet
Of wattled houses. . . ."

"The footprints of an elder race are here,
And memories of an heroic time,
And shadows of the old mysterious faith."

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P R E F A C E .



THE object the writer has in view in this Publication is to place on record the remarkable discoveries made in a department of Archæology hitherto almost unnoticed in Ireland, except in the Proceedings, Catalogues, and Journals of various learned Societies. So far back as 1861 a writer remarked that such a work would be “a real boon to archæology,” yet in the interval none has appeared. The cause is not far to seek. A publication treating of the habits and social economy of long-forgotten generations is little calculated to gain a rapid foothold with the general public, by whom the study of the past may probably be considered dull as well as useless reading. To many, however, it proves most interesting to observe—despite widest variations of climatic conditions—the great similarity of the ways and habits of man while in a rude uncultivated state—acting as it were by a

common instinct—and again to trace his upward progress towards civilization. A wide tract in this field of archæological research is fortunately opened up by a comparison of the Irish Lake Dwellings and their “finds” with those of other countries, more especially with the discoveries brought into such prominent notice by Keller in Switzerland, and Munro in Scotland.

To the late Sir William Wilde belongs the honour of first drawing general attention to the water habitations of Erin; his labours have been ably followed up by W. F. Wakeman, who has so largely contributed to the *Journal of the Royal Historical and Archæological Association of Ireland* both Papers and Drawings illustrative of the subject. In the present work, Kinahan, Reeves, Graves, Wilde, and other specialists, have been freely quoted, as evidenced in the text; in short, the observations of every author have been utilized, provided they touched on points that could tend in any degree to elucidate the subject under consideration. “A dwarf on a giant’s shoulders sees further of the two”: thus the writer, standing in this line of investigation on the eminence created by his predecessors, may perhaps be enabled to lay before his readers a distinct and comprehensive view of the Ancient Lake Dwellings in Ireland. Recent discoveries and new matter will be found in these pages; but the special intention has been to collect carefully all the information hitherto furnished by the explorers of Irish Lake Dwellings, and to present that information in a condensed form, “an abridgment of all that is pleasant,” so as to render it acceptable to

archæologists, and perchance agreeable to the general reader, who, not having had his attention previously directed towards the subject, can scarcely be supposed willing to explore the voluminous records of scientific societies in search of items connected with the question of lacustrine remains in Ireland.

This Publication may, perhaps, help to diffuse more generally the knowledge already possessed, so that when fresh discoveries are made in any new locality increased care may be devoted to the exploration; for every artificial island is not necessarily of remote antiquity, and the most careful examination is essential before arriving at a decision respecting the probable period of the primary construction of a crannog. It would be fortunate indeed should these pages excite sufficient attention to prove, even remotely, the cause of having the various relics indicative of the social economy and industries of the inhabitants of our ancient "water-towns" arranged systematically in the new Museum of the Science and Art Department, now in course of construction in Dublin. The facility thus afforded of studying these antiquities—some of them safely protected during untold centuries by their covering of peat and water—could not fail to lead to a clearer comprehension of the real condition of ancient culture and civilization in Erin.

The Council of the Royal Irish Academy most generously permitted for this work the use of all the woodcuts in their possession illustrative of lacustrine remains, and the same favour was accorded by the Royal Histo-

rical and Archæological Association of Ireland, through the Secretary, the Rev. James Graves.

Plate VIII. and figures 18, 27, 57, 129, 188, 196, 197, and 216 were granted by the Council of the Royal Archæological Institute of Great Britain and Ireland; figures 206 and 207 by the Society of Antiquaries of London, together with plate III. taken from *The Archæologia*; figures 6, 7, and 8, by the Anthropological Society; figures 214 and 215 by the well-known antiquary, John Evans; plate XXXVIII., by W. T. Lockwood; and by permission of Robert Mac Adam figures 126, 147, and 148, are reproduced from the *Ulster Journal of Archæology*. As far as practicable, every hitherto published illustration bearing on the subject was applied for, and, with but one exception, most kindly granted.

Much valuable information was furnished by W. F. Wakeman, who has also drawn most of the illustrations, their character and expression being well carried out by the engraver, William Oldham.

CLEVERAGH, SLIGO,

October, 1885.

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ERRATA.

Pages 74, 168, n., 182, 234, for *Cervus elephas*, read *Cervus elaphus*.

Page 90—fig. 65, for *No. 1 Crannog*, read *No. 4 Crannog*.

„ 180—Crannog-na-n-Duini (see p. 150) is omitted in the enumeration of sites in the *Co. Donegal*.

„ 181—Fort Lough is situated in the *Co. Donegal*, not (as given) in the *Co. Derry*.

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LAKE DWELLINGS.

PART I.

ORIGIN, CONSTRUCTION, AND CIVILIZATION

OF THE

ANCIENT LACUSTRINE HABITATIONS OF IRELAND,

AS ILLUSTRATED BY THEIR REMAINS, AND THE ANTIQUITIES
FOUND IN AND AROUND THEM.

LAKE DWELLINGS OF IRELAND.

“To look back to antiquity is one thing ; to go back to it is another. If we look back to antiquity it should be as those who are winning a race—to press forward the faster, and to leave the beaten still farther behind.”



ET us travel back in thought some thousands of years, and picture to ourselves the aspect of Erin at that period. After all, this retrospect is comparatively short, if we take as correct the present computed period of man's existence on this globe. Geology now assigns to the human race a duration it was long considered heterodox to imagine : generation upon generation, who shall say how many, lie beneath the sod over which our footsteps now pass.

The words of Genesis are in no way antagonistic to the discoveries of modern geologists, nor even to the theory of evolution. That the term “day,” as used in the Book of Genesis, is not to be understood as confined to a mere duration of twenty-four hours, but should be taken as an undefined period of time, is a point now so generally admitted that it is scarcely needful to quote the words of Scripture, that “one day is with the Lord as a thousand years, and a thousand years as one day.” In common parlance we speak of events that occurred “in days of old” without intention to limit the idea to periods of twenty-four hours: the form of expression may be held to cover an indefinite number of centuries. In the modern acceptance of the word used to denote the duration of twenty-four hours, we consider the day to be represented by the morning and the evening: there is the brightness of morn followed by the gloom

of eve. How different is the idea conveyed by the words of Moses, who was versed in all the learning of the Egyptians, "the Evening and the Morning were the first day," and so on to the end of the six days or intervals of time. While in its course through the heavens our planet was in process of solidifying, "the earth was without form and void, and darkness was upon the face of the deep." Here we have the evening: afterwards "there was light," that is to say, morning followed, marking full completion of the first day, or interval of time in the earth's progress towards its present state. It is therefore plain that the term evening cannot be considered to represent a decline from the state of the previous period; rather it betokens the nature of the morn about to follow. We watch with interest the signs of the evening, not in relation to the day which has already passed away, but as foreshowing the kind of morn that is to succeed.

" . . . oh who can strive
To comprehend the vast, the awful truth
Of the eternity that hath gone by,
And not recoil from the dismaying sense
Of human impotence ?"

In looking back through the pages of history we arrive at a period when all written records cease; but the remains of the dwellings of man, of his arts and industries, enable us to trace out in some degree the general routine of his every-day life. In the matter now under consideration, pre-historic archæology interests chiefly as demonstrating, in a practical manner, the state of the people who occupied Erin long before the beginning of authentic history. Recent researches enable us to lift the veil that heretofore concealed the past of subsided lake-dwellings in Ireland, to bid

"Forgotten generations live again,
Assume the bodily shapes they wore of old";

to realize to a great extent the physical past of their inhabitants, and in imagination to partake of their daily life. If till lately the learned were on this subject purblind, it is the less surprising that the uncultured fisherman, gliding in his skiff over the placid surface of the waters and peering into the clear depths, should have failed to recognize that the mouldering stems projecting from the

oozy bottom were traces of the love of security of his forefathers, that in the muddy matrix of the ever-accumulating lacustrine deposit, are preserved material evidence of a state of society long since passed away.

Until the first half of this nineteenth century all memory of the ancient lake-dwellers of Ireland seemed to have vanished completely, but with the study of ethnology the interest excited in tracing out the idiosyncrasies of the various races of man penetrated to Ireland also, and now "few things can be more interesting than the spectacle of an ancient, long-forgotten people, thus rising, as it were, from the waters of oblivion to take that place which properly belongs to it in the history of the human race."* Beyond the limits of history and archæology there extends a boundless period of human existence. Far back in this indefinite past we catch glimpses of a shadowy race, the first dwellers in Erin, who, it may be fairly surmised, were in a very rude state—nomad hunters and fishers, subsisting by the chase, which they supplemented by indigenous wild fruits:

"Rugged type of primal man,
Grim utilitarian,
Loving woods for hunt and prowl,
Lake and hill for fish and fowl."

They formed their ordinary implements and their weapons of warfare from flint, stone, bone, shells, and even wood.

"They were, then were not; they have lived and died,
No trace, no record of their *date* remaining."

New comer succeeded new comer in Erin. This epoch was eminently characterized by the sway of brute force—a warlike front alone secured immunity from spoliation; in short, these times were governed on

". the good old plan
That he should take who has the power,
And he should keep—who can."

Wooded nature of the Country.—The ancient classical name of Ireland was *Ierne*, which some etymologists derive through its Greek form from the Celtic, signifying, they say, "the extremity,"†

* *Prehistoric Times*, Sir John Lubbock, 2nd ed., p. 214.

† Some Irish scholars give a different interpretation.

the "Ultima Thule" of classic writers; a mystic land, girded by unknown seas, and protected by phantom dangers, the product of imagination,

"Gorgons and hydras and chimeras dire."

The witty and eccentric Dean Swift, remarking on the custom of writers of his day, said:—

"So geographers in Afric' maps
With savage pictures fill their gaps,
And o'er inhabitable downs
Place elephants, instead of towns."

It is strange how long this ignorance both as regards Ireland and the "Dark Continent" continued. One of the earliest names of Ireland, given her by her own native poets, is very descriptive, *Fidh-inis*, "the woody island." This name at once brings before our minds the then characteristic feature of the country, even as its modern poetical designation, "The Emerald Isle," depicts the luxuriant vegetation watered by the cloud-masses of the Atlantic. The bogs of Ireland, however, speak even more eloquently on this point than her bards, for in these bogs vestiges of ancient forests are found buried, sometimes at great depth below the present surface; the remains of oak, birch, mountain ash, alder, yew, beech, deal, &c., testify to the variety of the arboreous vegetation: they lie either prostrate in a horizontal position, or bear marks of having been felled by man. According to old bardic accounts, the first proceeding chronicled of the earliest settlers was the clearing of timber off many great plains in various parts of Ireland, evidently showing the paucity of arable land.

Wild Animals.—This continuous forest must have swarmed with wild animals of every description. Wolves, which even in the present day prove a scourge occasionally in parts of Europe, were numerous; the caves which abounded in the country were the home of the bear, and the boar fed beneath the deep forest shade. In these remote times, too, the Irish elk, with its huge, broad, branching antlers, a creature of immense size and strength, was existent. Remains of this gigantic deer, the *Megaceros Hibernicus*, have been found, covered by the peat at various depths, sometimes close to the surface; and from allusions in Irish poetry and legends*

* Hull, in his *Physical Geology of Ireland*, cites the "Four Masters" as alluding to man and the *Megaceros* being contemporaneous, p. 270.

it is more than probable that it continued to exist down to a much later period than most of the other animals now extinct. In a very curious legend, one of the great Irish bards who is reputed to have lived in the third century, and to have himself attained a very advanced age, is described as reciting at a banquet a poem in which he extolled the greatness and strength of his contemporaries and forefathers, and described the tall gigantic deer hunted by them. His listeners laughed incredulously, whereat the old man rose in anger, and going to a neighbouring heap where were piled the relics of bygone hunts, he selected therefrom a shank-bone, and returning to the banquet, took from the table one of the shank-bones of the deer on which the guests were then feasting, and dropped it through the hollow of the bone he had brought in. This legend of the dim old times tends to prove that at a very remote period tradition alone kept up the memory of the Irish Bighorn.* The fact of the co-existence of the *Megaceros* with man does not, however, rest on mere legend; for in a locality called the "Elk Hole," Co. Wexford, numerous skeletons of the extinct deer have been found in company with the remains of man, also a skull and horns, in the "kitchen midden" of the largest of the lake dwellings in Loughrea, Co. Galway, measuring over 13 feet from tip to tip of the antlers;† whilst in the refuse heap at Breagho, Co. Fermanagh, portion of an antler (according to the opinion of Professor Owen) was discovered, sawn and perforated with holes. It does not necessarily follow that this relic had belonged to an animal killed and utilized by the lake-dwellers; the horn may have been found by them on some spot where it had rested for ages. However, in the lake-dwelling at Cloonfinlough, Co. Roscommon, bones of the *Megaceros Hibernicus* have been dug up in a very broken state, as if fractured for the purpose of extracting the marrow, whilst remains of the *Megaceros*, in company with a greenstone celt, were discovered in a cave at Cappagh, the bones broken and formed into implements by the hands of

* Sir John Lubbock, writing of extinct mammalia, states that remains of the *Megaceros Hibernicus* never occur in the 'Kjökken-moddings,' lake habitations, or sepulchral remains; nor are there any traditions in Western Europe which can be regarded as indicating even obscurely a memory of this gigantic mammal.—*Prehistoric Times*, 2nd ed., 1869, p. 291.

† *Proceedings, R. I. A.*, vol. viii. p. 424.

man.* In Lough Gur, Co. Limerick, wherein is the site of a lake dwelling, remains of the *Cervus tarandus*, or reindeer,† were found, together with those of the bear; and near Ballybetagh, Co. Dublin, similar remains were associated with those of the *Megaceros*, whilst elsewhere bones of the *Cervus alces*, or true elk, have been exhumed, and traces of the mammoth, *Elephas primigenius*, have been found near Dungannon.

Climatic Changes.—If reliance can be placed on the accounts of classical writers, it would appear that two thousand years ago an excessive degree of cold prevailed in the climate of Europe. The great number and extent of forests, lakes, and morasses, which according to classical authors existed in their time, must have rendered the climate of Europe exceedingly cold and moist. The forests have nearly all been felled, the stagnant water drained, thus producing a very considerable difference between the temperature described as existing in these latitudes 2000 years ago and in the present day. What occurred on the Continent occurred also in Ireland, which, shaded with forests and abounding in marshes, must have had an atmosphere more frigid than if its soil were then, as now, freely exposed to solar influence.

Claudian applied to Ireland the epithet 'icy': Strabo looked on it as a country scarcely habitable; Mela described the climate as cold and unfavourable: however, to counterbalance these authorities, it may be inferred from Tacitus that Ireland was considered milder in climate than Gaul; in that point of view Æthicus says it was superior to Britain, and Solinus states that it abounded in pastures. Owing to the disappearance of Erin's former leafy mantle, and the absence of pestilential exhalations from stagnant fens, the summers have become much colder and the winters warmer than in remote times.

The turf-cutter in Ireland finds that "usually the roots and trunks of the trees under the peat, or in the lowest strata, are principally those of the oak and yew, as if prior to the growth of the peat the low country was a vast forest of these trees. It would

* *Journal of the Royal Geological Society of Ireland*, vol. v. p. 170. New Series.

† "As far as we can judge from the present evidence, the first appearance of the reindeer in Europe coincided with that of the mammoth, and took place at a later period than that of the cave bear or Irish elk."—Sir John Lubbock, *Prehistoric Times*, 2nd ed., 1869, p. 293.

appear that subsequently mosses and other peat-producing plants began to grow and flourish, until eventually they stopped the drainage, and formed an envelope of peat, thus killing the trees, which one by one toppled over and were buried in the succeeding growth of peat. After the disappearance of the major portion of the oak trees, the bogs, year by year, gradually increased in depth, until apparently suddenly, for some as yet unexplained cause, their growth ceased, and on their surface forests, principally of deals, sprang up.”* Thus we see that since the glacial period there have been great changes in the aspect and the surface of Ireland: first, the great oak forest age; then an age in which was an active growth of peat; thirdly, a period when forests of deal sprang up; fourthly, again a period of luxuriant peat growth.

The remains of human handiwork, in the form of log-houses or lake-dwellings, have been found buried under each and all these peat growths: a depth of 25 feet had overgrown the log-house discovered at Inver, Co. Donegal, and on the floor-level, outside the building, were traces of the corks of the great oak forest age. It is practically impossible to estimate the rate at which a bog grows: if there be a fall, and consequent drainage, it will increase but little, whereas an undrained bog augments with considerable rapidity: so many contingencies are thus introduced as practically to invalidate in a great degree calculations regarding the growth of peat over prehistoric or other remains. G. H. Kinahan has estimated that in undisturbed conditions each year's growth, represented by a layer or lamina somewhat resembling the markings on a forest tree, would average one hundred laminæ to the foot in white or surface turf, two to three hundred to the foot in brown turf, and six to eight hundred to the foot in black turf, so that the accumulation of 25 feet above the log-house at Inver, according to this painstaking calculation, would represent an age of startling remoteness.

Lakes.—Ireland was a land of lakes as well as of forests, for the white-shell marl, which forms the substratum of peat bog in low-lying situations, was formerly covered by water, till gradually displaced by the encroachments of the surrounding

* *Geology of Ireland*: G. H. Kinahan, p. 262.

bog. Many of the smiling districts of to-day were then covered by water—

“Now land, now lake, and shores with forest crowned.”

Lakes were thickly scattered over the face of the country—lakes of irregular shape connected by stagnant shallows—the majority of small size, half marsh, half water, fringed with forest, and abounding in fish. The axe of the primitive pioneer and the modern engineers' spade have revolutionized the aspect of the landscape: this process however was gradual, the forests were only driven back little by little, and it is comparatively yesterday since draining operations on a large scale have been carried out; within the memory of persons still living there were numerous localities throughout the kingdom, where

“The bittern's lonely boom was heard
Along the waving reeds.”

It is only after drainage on a great, or rather thorough scale, that anything like complete inspection of the original structure of a lake dwelling, or any extensive “find” can be hoped for, the majority of such sites being surrounded by soft pulpy bog to such a depth and extent as to bewilder the most enthusiastic explorer.

Lough or Loch is the term applied both in Ireland and Scotland to a lake: it also signifies an arm of the sea. The shores of small sheets of water, and marshes with sedge-grown borders, were generally surrounded by bog, and the annual growth of this latter substance gradually encroached on the lake, till its former shining surface was changed into a peat moss.

It has been remarked, that occasionally the silt now occupying the former lake-bed, demonstrates the fact, that the under stratum was formed in great measure by decomposed vegetable matter, probably aqueous plants and the shed foliage of the encircling forest: the later deposit is considerably mixed with fine clay. The most probable solution of this problem is, that on the disappearance of the woods the exposed surface of the soil was washed down from the surrounding heights by every shower that fell, and if the land were tilled this denudation would be accelerated. Consequent upon the discharge of the water deepening and extending the outlet, and the contemporaneous deposition of matter held in solution in the lake-bed, small loughs in some

instances now occupy sites which, from natural evidences, it is apparent must formerly have been extensive sheets of water; in other instances the large lake of ancient days, is now represented by several of diminutive size, connected by marshes that had at one time formed part of a great whole. In ancient times, however, the lakes most frequently appear to have gradually increased in height: this was due to the silting up of the outlet, under any circumstance a long and tedious process; for though the aqueous growth on the bottom of the outlet would, during the summer, impede and catch the heavy particles washed down or held in solution by the current, yet in winter, when it decayed, most of the accumulated matter would be swept away, so that in a hundred years the increase in height of the outlet would be scarcely perceptible. What then must be the age of lake dwellings, where three and even four superincumbent floors testify to the necessity of providing against the ever-rising water level!

Lakes, marshes, and woods, have in all ages afforded shelter to the conquered, and have often enabled them to set the invader at defiance. Pliny describes the Caledonian forests as "*Romanorum armis terminus.*" A race inferior in numbers, in arms, or in physical development, would avail themselves of artificial or natural bulwarks to ward off the attacks of dreaded enemies, and water and woods have from the earliest times formed important factors in the art of defence.

One cause to which may be ascribed the first erection of lake dwellings in Ireland was the original paucity of open country, for on the arrival of the first colonists (if credence is to be given to the early native annals) the only plain not covered with forest was the level district stretching between Dublin and Howth. This statement of the superabundance of forest is, to some extent, corroborated by the vast number of local names derived from Irish words signifying woods or timber of some description. However, the most probable cause of their erection was to serve as places of refuge, for these island homes would necessarily provide safety and protection; indeed such, in their later or historical existence, was undoubtedly the cause of their continuous occupation. It is quite obvious that in primitive times, especially, a habitation on water was of great security—more secure than could be a stockaded *doon* or fort.

Lake dwellings have been universally employed both in ancient and modern times: similar physical surroundings originated practically the same style of structures amongst far distant and even ocean-separated tribes. "Man is moulded to a remarkable degree, physically as well as mentally, by manner of living, food, and climate. Among barbarous nations," says Humboldt, "we find a *tribal*, rather than an individual physiognomy; there are no varieties of intellectual development to stamp the face with diversity of character: thus the slave-dealers in Upper Egypt never ask for the individual character of a slave; they only inquire where he was born, his character being that of his tribe."

Let us now, like Puck,

"Put a girdle round about the earth,"

and inspect these habitations for ourselves. Ancient classical writers are not altogether silent on the subject. Hippocrates, who lived upwards of 400 years B. C., when describing the manner of life of the inhabitants of Phasis, a region of the Black Sea, says that the country was fenny and wooded, the climate warm and humid; but despite these disadvantages, the natives lived entirely in the swamps, "for their dwellings are constructed of wood and reeds, and are erected amidst the waters." He adds that they seldom practise walking, either in the city or the market, but sail up and down in canoes constructed out of single trees, for there are many canals there.*

An account is given by Herodotus of the abode of a Thracian tribe, the Pæonians, who lived on Lake Prasias, now Lake Takinos, situated in the country known in the present day as Roumelia. The habitations of this tribe were reared on platforms, raised on piles above the water, and connected with the shore by a narrow causeway of similar formation. This tribe successfully resisted the attack of a Persian army under the satrap Myabyzus. The Father of History thus describes this settlement:—"The habitations on the lake of Prasias are of this nature—floors laid on lofty poles stand in the middle of the lake,† with a narrow entrance by one bridge from the mainland. All the inhabitants used to drive, at their

* Hippocrates, vol. i., p. 209. *De Aeribus*, xxxvii.

† ἐν μέσῃ ἔστηκε τῇ λίμνῃ. These dwellings in the middle of the lake were out of bow-shot, out of reach of fiery projectiles against thatched roofs and wooden walls—a description of attack to which some of the Helvetic settlements probably succumbed.

common expense, the piles that served to support the floors. Subsequently they have adopted the following regulation: for every woman a man marries he is to drive three piles, which they procure from a mountain called Orbelus. Now, every man takes several wives. They dwell here in the following manner: each has a hut in which he lives, and a trap-door in the floor opening down to the water. To their horses and draught cattle they give as fodder fish, of which there is such an abundance that when one opens his trap-door, and lets down his empty basket into the lake by a cord, after waiting only a short time, he hauls it up full of fish.”* The fishermen of this lake still continue, as in the time of Herodotus, to inhabit huts built over the water.†

In Layard’s work, descriptive of the discoveries on the site of Nineveh, there is an engraving of a bas-relief from the palace of Sennacherib, which represents an artificial island, apparently formed by weaving together the tall reeds that grew on the banks of the Euphrates; and a prehistoric age is indicated by the dwellings which existed in the Gocktscha lake in Armenia.

It is certain that lake dwellings were used as places of permanent abode. Remains of such works of ancient date are, on the continent of Europe, by no means confined to the area of Switzerland, to which country they were for some time popularly supposed to belong exclusively; they have been found in Savoy, in the north of Italy, Würtemberg, Bavaria, Austria (Carinthia), Hungary, Mecklenburg, Denmark, Pomerania, Brandenburg, and also in France. If dependence can be placed on remains found in these numerous and widely-distributed sites, many of them would appear to have been occupied so late as the period of the Romans; and the silence of their historians on the subject is therefore singular, as in general the characteristic traits of the tribes with which the Roman legions came in contact were depicted with remarkable fidelity.

In Switzerland, during the year 1829, an excavation was made on the shore at Ober Meilen, on the lake of Zurich, for the purpose of deepening the harbour; and although piles and other antiquities were then discovered, they appear to have attracted no attention. So matters stood till the winter of 1853-4, when an extraordinary drought and long-continued frost caused the lakes to sink to a

* *Herodotus*, Book v., chap. xvi.

† *Prehistoric Times*, Sir John Lubbock, 2nd ed., p. 169.

level never before known. This circumstance presented great facilities for the reclamation of land along the shores, and the inhabitants of Ober Meilen proceeded to rescue from the water some of the land thus temporarily exposed. When making excavations to form an embankment, they came upon a net-work of wooden piles, a great number of stags' horns, and various implements, only two of which were of bronze. The discovery of this settlement aroused peculiar interest, not merely on account of its being apparently the first recorded, but because it evidently belonged almost exclusively to the stone age. Similar structures were immediately after discovered in almost all the lakes of Switzerland, the favourite site being a sunny sheltered bay, with soft and gently-shelving bottom. They were of three classes—first, *pile dwellings*: the piles, some-

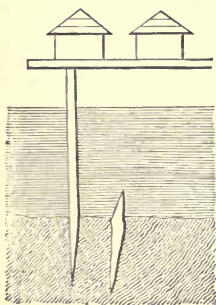


Fig. 1.—Sketch Section of Swiss Pile Dwelling.

times 30 feet in length, were driven into the bottom of the lake, and occasionally further strengthened by the deposit of stones around their base: these constructions always occur in deep water. Secondly, *frame pile dwellings*, in which the piles, instead of being driven into the mud, were fixed by a mortise and tenon arrangement into split trunks lying horizontally along the bottom of the lake. Thirdly, *fascine dwellings*, formed by layers of fagots, alternating with brushwood, clay, gravel, and stones, one over the other, till the top reached the required

level above the surface of the water; piles were driven in around to bind the heap together, and the whole overlaid by a wooden floor, upon which the dwellings were erected.

This construction bears a close family resemblance to the Irish type, in which the huts stood, so to speak, on *terra firma*, and not *en l'air*, above the surface of the water. Like Irish dwellings of analogous formation, this species of substructure has as yet been found only in small lakes with soft and muddy bottoms, and of little depth and extent; they owe their origin to the fact, that piles driven into the oozy lake bottom could not have supported the necessary weight; for, if heavily laden, they must have sunk altogether below the surface of the water, or at least could not have retained their relative positions. This formation seems to have

been of more ancient date than the artificial stages upon piles alone, inasmuch as few, if any, instances have been discovered in which bronze remains are associated with fascine dwellings. So far as can be judged from the manner in which the timbers are mortised together, as well as from the characteristics of the fictile ware found, their inhabitants differed in nothing from those who, owing to their better acquaintance with metal, constructed dwellings of greater solidity, in deeper water, and under more varied conditions. "*It was impossible to adopt the fascine structure in the larger lakes, for it must have been foreseen that the waves which could drive amongst the upright piles of the usual pile dwelling without injuring them, would, in stormy weather, wash over the edges of the fascine platform and tear it in pieces.*"*

The "fascine" lake dwelling in the lake of Fuschl, near the Mondsee in Austria, resembles, in most respects, those found in Switzerland, Ireland, and Scotland. This little lake is rich in fish, and its banks abound with game; on its western shore, in a little inlet, lies an artificial island nearly circular, about fifty paces in diameter, separated from the mainland by a narrow channel, now almost choked with peat-moss and marsh plants. The islet is only just above the ordinary water-level, and on inspection its construction was found to be as follows:—

First, a thick layer of peat-moss, then a stratum of branches, principally of mountain pine and dwarf birch: the foundation consists of large boughs or trunks of pine trees, the top pointing inwards. Small piles were driven through the different layers to hold the mass together, whilst on the exterior, a number of much smaller piles were driven into the lake-bed, probably to protect the structure from wave action. The difference in general constructive details between the dwellings on Helvetian and Hibernian lakes may be accounted for by the depth of water of the former, and the shallow muddy bottoms of the latter. Remains of a dwelling have been found embedded in the peat-bogs by which the hill of Chamblon is surrounded. The peat-cutters of Les Uttins, discovered horizontal beams with mortises, and a wooden road-way across the marsh leading to the spot. There are two settlements here, both very ancient: one is situated at a distance of 1850 yards from the lake, the other at a distance of 2200 yards, in an alluvial

* *Lake Dwellings of Switzerland*, Keller, 2nd ed., p. 73.

plain formed since their erection. Dr. Keller also describes 'steinberge' or stonehills, *i. e.* elevations on the bottom of the lakes, composed of stones and gravel artificially deposited. These were formed by the natives on natural shallows, for the purpose of lessening the depth of water. At Nidau, in the lake of Bienne, there is an artificial island encircled with piles, planks being laid horizontally at the bottom to retain in place the stones of which it is composed. At Möringen, in the same lake, there is a structure of similar type; whilst a large canoe, which had probably been used at its formation, was found lying at the bottom laden with a cargo of stones. Structures almost identical with the Irish have been found in the lakes of Inkwyler, Nussbaumen, and Wauwyl. The pile dwellings of Switzerland, *i. e.* those erected in deep water and in the larger lakes, bear a much closer resemblance to the description given by Herodotus than to the dwellings discovered in Ireland and Scotland. The settlement at Morges, on the Lake of Geneva, was 1200 feet in length by 120 in width, so that if entirely covered by a platform its area, according to the computation of M. Troyan, would have been sufficiently ample to accommodate a population of upwards of 1200 souls. Sometimes, as at Wangen, the villages were built close to the shore, and seem, as in Ireland, to have been protected by palisades.

The framework of the huts was probably made of logs and wattles, or of hurdles plastered over with clay: portions of the latter, with marks of the wattling still distinct on them, have been drawn from their watery bed. The Swiss dwellings appear to have been rectangular, resembling perhaps the chalets of the present day: it has not been decided whether they were divided into rooms, but, just as in the Irish dwellings, each hut had its hearth, of which the flat stones still often lie *in situ*; the invariable presence of clay weights indicates that most families possessed a loom, whilst from the remains of straw and reeds, it may be inferred that the roofs were thatched. The wide chronological range of these remains is very remarkable. The settlements in which stone implements have been found are more widely spread and more numerous than those of the metallic period. In Switzerland these lake villages appear to have commenced to decay, or to have been abandoned towards the close of the bronze age, and to have almost ceased to exist on the introduction of iron. In the stone era the bones of wild animals, of stags, of urus, of auroches, and wild boar, are

found, whilst in the metallic ages remains of domesticated animals preponderate more and more, till the final abandonment of these "water-towns." The remains of human handiwork around the dwellings illustrate the habits, domestic usages, and skill, of their inhabitants during untold centuries; but the most striking fact is not so much their similarity to the Irish structures, as the identity in form and use of the articles discovered in them, both those employed in war and in the chase, as also the culinary and domestic implements, the objects of personal decoration, and those employed in the toilet.*

Scottish archæologists were aroused by the lacustrine discoveries on the Continent to investigation of similar remains occurring in their own country. It was found that early historic references to island forts, and incidental notices of the exposure of artificial islands, consequent on drainage operations, had been entirely overlooked. A crannog, that of Lochinadorb, in Moray, was honoured by a visit from Edward I. in 1303, and was considered of such importance, that thirty-three years later Edward III. led an army to its relief. A crannog in Loch Kinord, in Aberdeenshire, is mentioned in history in the year 1335: it received James IV. as a guest in 1506, and enjoyed a continuous existence until 1648, when its fortifications were razed by order of Parliament. Forty years after the dismantling of this island fortress, the crannog of Lochan-Eilean, in Strathspey, is described as "useful to the country in times of trouble or wars, for the people put in their goods and children here, and it is easily defended." Artificial islands formed of wood or stone, often identical with those a short time previously ascertained to have existed in Ireland, were found more or less spread over the entire of Scotland. These have been lately classified and considerably added to by Dr. Munro, and in his work† at least fifty-three well-authenticated discoveries of wooden lake structures in Scotland are enumerated.

The Dowalton settlement, in the lake of that name, in Wigtownshire, seems to have been abandoned by its inhabitants at an early period: nothing mediæval was found on the site; a copper coin indeed (described, however, as of doubtful character) was picked up; but as it may have been dropped into the water at any period,

* *Proceedings R. I. A.*, vol. vii., p. 151.

† *Ancient Scottish Lake Dwellings*.

its presence need not disturb such inference as we may draw from the other articles discovered. Mr. Stuart says, "there is a peculiar interest in the small colony of Dowalton, from its neighbourhood to the site of Ptolemy's Roman town of Leucophibia . . . and that at least one object of Roman workmanship. . . has been found amongst the relics of the old inhabitants of the islands. It was only a matter of conjecture how it came there—whether in the course of commerce, by gift, or by appropriation after the removal of their Roman neighbours. It seems, however, not unreasonable to regard the occurrence of a Roman vessel at Dowalton, associated as it is with relics which are elsewhere found in early sepulchral cairns and British hut circles, as pointing to a period of occupation of the islands not later, and probably earlier, than that of the Roman settlement." The list of antiquities brought to light at Dowalton is therefore extremely valuable for Irish Archæologists, as it included specimens of almost everything usually found in Irish crannogs (with the exception of the copper coin of doubtful character), also of a bronze vessel of undoubted Roman manufacture.

The Irish lake dwellings have, over and over again, yielded articles precisely similar to the annexed list,* but as a rule they are more prolific in objects of early manufacture, which, from their style of ornamentation, are commonly referred to a period from the fifth to the tenth century. Dr. Munro remarks, that although we cannot "argue definitely from the present geographical distribution of Scottish lake dwellings, the indications are so clearly suggestive of their having been peculiar to those districts formerly occupied by Celtic races, that the significance of this generalization cannot be overlooked."

The unlooked-for discovery of lake dwellings in Yorkshire, resembling those of Ireland and Scotland, proves that in Britain

* (1) bronze dish with handle of Roman work; (2) two bronze dishes hammered out of the solid; (3) a small bronze dish of separate pieces rivetted together; (4) a bronze ring having attached to it a portion of the vessel of which it had been the handle; (5) fragment of leather with a stamped pattern on it; (6) a large blue glass bead; (7) two glass beads with streaks and spots; (8) a bead of amber; (9) a bead of vitreous paste; (10) a small brooch of bronze; (11) a small ring of bronze; (12) a copper coin; (13) five querns; (14) a fragment of bronze; (15) a piece of iron slag; (16) a small earthen crucible; (17) whetstone; (18) three iron hammers; (19) portions of armlets of enamelled glass; (20) five canoes.—*Notices of Scottish Crannogs*, John Stewart, p. 8.

also there had been a lacustrine population in times probably prehistoric. During the execution of drainage operations in the Holderness district, bone tools and fragments of piles were exhumed: this led to the discovery of the remains of lake dwellings. The excavations made it apparent that the construction, as is observable also in many Irish crannogs, was of two ages—the stone and the bronze. In the upper stratum, bronze objects, then rude stone, flint, and bone weapons. As in the Irish so in the British remains, the very dressing of the timber framework demonstrates the fact of the constructors having worked in the lower portion with stone, and in the upper with metal hatchets.

It may be remarked that the great city of London seems to have risen from a collection of rude pile dwellings, as traces of these structures have been found both near London-Wall and at Southwark. They are thus described by General Lane-Fox:—"Upon looking over the ground, my attention was at once attracted by a number of piles, the decayed tops of which appeared above the unexcavated portions of the peat, dotted here and there over the whole of the space cleared. . . . Commencing on the south, a row of them ran north and south on the west side: to the right of these a curved row, as if forming part of a ring. Higher up, and running obliquely across the ground, was a row of piles having a plank about an inch and half thick, and a foot broad, placed along the south face, as if binding the piles together. . . . The points of the piles were inserted from one to two feet in the gravel, and were for the most part well preserved, but all the tops had rotted off at about two feet above the gravel, which must have been the surface of the ground, or of the water at the time these structures were in existence."* The vast majority of the relics belonged to the Roman era, but there were others of ruder workmanship. The kitchen middens contained cockle, mussel, oyster, and periwinkle shells: amongst the animal remains were those of the red deer, horse, wild boar, goat, dog, and the *Bos-primigenius*, *Trochoceros*, *Longifrons*, and *Frontosus*. The superincumbent strata varied from 18 to 21 feet in depth. The Thames, formerly a less deep but

* "A description of certain piles, found near London-wall and Southwark, possibly the remains of Pile-Buildings." A Paper read before the Anthropological Society, December 18, 1866.

wider river than at present, appears to have had a pile-dwelling population established on its shallows at various favourable points. At Kew, near the mouth of the Brent, piles have been disclosed to view, marking as is supposed the site of an ancient "water-town;" and at Barnes, in the opposite bend of the stream, similar remains have been observed associated with flints, celts, and other primitive relics. Well-authenticated lacustrine sites have been discovered at Wretham Mere, in Norfolk;* at Barton Mere, near Bury St. Edmund's;† on Cold Ash Common, Berks;‡ and in Llangorse lake, near Brecon, South Wales.§

Dr. Munro is of opinion that the lake dwellings of Scotland were erected by the semi-Romanized Celtic inhabitants, as a means of protection when they were left to contend against the attacks of the Angles, the Picts, and the Scots, upon the withdrawal of the Roman legions from Britain; but when Cæsar arrived on the banks of the Thames the use of wooden stakes, palisading, and piles, for defensive purposes, was, as described by him,|| common amongst the Britons—defences which were in fact of the nature of the palisading with which Irish and Scotch lake dwellings were surrounded. These works seem to have been of an enduring character, for the Venerable Bede, writing at the commencement of the eighth century, states that some of the stakes retained their position even in his day. A very interesting account given by Adulfeda, Syrian Prince and historian, who wrote about the commencement of the fourteenth century, depicts the Apamæan lake as a collection of small sheets of water of little depth, linked together by huge swamps. The string of lakelets was margined with dense borders of reeds, flags, and willows, and abounded in game and fish. Adulfeda describes the most northerly lake of this chain as "commonly called the lake of the Christians, because

* *Quarterly Journal of the Geological Society*, vol. xii. p. 255.

† *Early Man in Britain*, p. 352.

‡ *Nature*, vol. xvii. p. 424.

§ *Lake Dwellings of Switzerland*, Keller, 2nd ed., p. 660.

|| *De Bello Gallico*, lib. v. xviii: "ripa autem erat acutis sudibus præfixis munita; eiusdemque generis sub aqua defixæ sudes flumine, tegebantur." The *oppidum* of Casivellaunus is described as being, "Sylvis paludibusque munitum," and by Orosius, "inter duas paludes situm, obtentu insuper sylvarum munitum." Cæsar also states, lib. v. xxi., "oppidum autem Britanni vocant, quum silvas impeditas vallo atque fossa munierunt, quo incursionis hostium vitandæ causa convenire consuerunt."

it is inhabited by Christian fishermen who live here on the lake in wooden huts built upon piles.”*

Venice, the once proud Queen of the Adriatic, the whilom mart of Europe, with her lofty campanile, her beautiful temples, and her marble palaces, rising vision-like from her watery bed, was in origin but a cluster of fisher huts perched on piles in the shallow lagoons at the mouth of the Po, a site selected by these toilers of the sea for security and refuge from the ravages of the Huns under Attila. In the commencement of the sixteenth century, when the Spaniards marched on Mexico, “they saw, as they passed along, several large towns resting on piles, and reaching far into the water, a kind of architecture which found great favour with the Aztecs.” These first founders of what now is the city of Mexico, after enduring the casualties and hardships of a migratory life, at length resolved to erect a permanent abode; and to protect themselves from their surrounding enemies, laid the foundations of the future city “by sinking piles into the shallows, for the low marshes were half buried under water: on these they erected their light fabrics of reeds and rushes, and sought a precarious subsistence from fishing, and from the wild fowl which frequented the waters, as well as from the cultivation of such simple vegetables as they could raise on their floating gardens.”† The Spaniards who first visited the shores of Maracaibo, to the North of the South American Continent, found the natives living in huts on piles in the water. They named the locality Venezuela *i. e.* “Little Venice”: that name now embraces a forest tract as large as France, a mountain tract larger than Switzerland, and steppes like those of Mongolia. Vasco Nunez failed in an attack on a tribe in Dabaybe, who lived in huts stretching from tree trunk to tree trunk growing in a watery swamp. The city of Tchakash is built over the river Don, and it has been suggested that the huts raised on piles by the fishermen of the Bosphorus may represent there the last lingering traces of an ancient custom.

Captain Hiram Cox, in his *Journal of a Residence in the Burmahan Empire*, written in the year 1796–7, describes the villages along the banks of the Rangoon river as “built of bamboo and cadjan,

* Supplementa tabulæ Syriæ, cap. ii., as quoted in Keller's *Lake Dwellings of Switzerland*, 2nd ed., vol. i. p. 497.

† Prescott's *Conquest of Mexico*.

raised on piles in the manner of the Malays," and throughout his diary he makes frequent allusion to this singular custom. Forrest says that in many parts of the coast of New Guinea the people live in huts placed on stages erected on posts, as a means of protection against the attacks of their enemies, the Haraforas, from the interior of the country. On these stages they haul up their proas or canoes. Similar structures have been described by travellers in the Celebes, the Caroline Islands, and elsewhere in Polynesia.

D'Albertes, in his *New Guinea*, states that the house inhabited by him at Salwatee was suspended over the sea on piles, and adds, "all, or nearly all, the houses are built like ours, on piles, and are surrounded by water at high tide, some indeed at all times, and the people go to and fro by means of a bridge made of the trunks of small trees. At a distance of little more than half a mile there is another small village." On the river Ramoi, D'Albertes saw four or five houses built on piles about 20 feet high; and when describing a native village, of the people of Mausniam, he states that all "the houses are built on wooden piles driven into the sea, and approached by a bridge constructed of the trunks of small trees." At Lorony nearly the entire village was over the water. "The houses of Mafor are built entirely in the water, so that a little bridge is necessary to enter them from the shore." "The Arfahs live in small villages, in houses built on piles."*

In the bay of Dorei, in New Guinea, there are four villages erected on piles over the sea. Each village contains from eight to fifteen houses; each house consists of a row of distinct rooms, and contains several families. These structures are entirely formed of wood very roughly finished. The same writer states, "Formerly the entire town of Tondano was erected in the lake, the only means of communication from one house to another being by boat. In the year 1810, relying on the strength of this position, the inhabitants, who were at strife with the Dutch, tried to shake off their yoke, took up arms, and were beaten. It was with difficulty the Dutch succeeded in subduing them, for which purpose they had to employ artillery and to build gunboats. To avoid a repetition of similar troubles, the natives were forbidden in the future to construct their dwellings on the lake."†

* *New Guinea*, vol. i. pp. 47, 145, 216, 218, 401.

† "Jadis toute la ville de Tondano était construite sur le lac, et l'on ne communi-

The dwellings of the Dyaks are described by the Bishop of Labuan as "built along the river side on an elevated platform 20 or 30 feet high, in a long row, or rather it is a whole village in one row of some hundreds of feet long. The platforms are first framed with beams, and then crossed with laths about two inches wide and two inches apart."* Munro draws attention to the lake dwellings at Singapore, erected on a series of tall piles, the flooring considerably above the surface of the water: in the intervening space light boats were suspended. It would also appear that pile dwellings of circular shape are to be observed in parts of Japan. Captain Cook notices the summer and winter habitations of a tribe called Tschutski in Kamtschatka. The winter lodge is sunk below the surface; the summer, raised above the ground and constructed on a platform supported on poles.

Whilst staying at Maracaibo, in Venezuela, a traveller took great interest in a singular tribe of Indians called Guajiros, who lived near the town in "pile dwellings." He was conveyed to his destination in a rude canoe, formed simply of the hollowed-out trunk of a tree. On reaching the village, the huts, with their low sloping roofs, were seen to be perched on high piles over the shallow waters, and to be connected with each other by narrow plank bridges formed of the split stems of palm trees. To enter the huts, the visitor had to climb an upright pole by means of notches cut in the side. "Each house or cock-loft consisted of two parts, the pent-roof shelter being partitioned off in the middle; the front apartment served the double purpose of entrance hall and kitchen; the rear apartment as a reception and dwelling chamber, and it was not a little surprising to observe how clean it was kept. The floor was formed of split stems of trees, set close together, and covered with mats. Weapons and utensils were placed in order in the corners. . . . The positions chosen for their erection are near the mouths of rivers and in shallow waters; the piles on which they rest are driven deep into the oozy bottom, and so firmly do

quait d'une maison à une autre qu'en bateau. Forts de cette disposition, en 1810, les habitants eurent de démêlés avec les Hollandais, et voulurent secouer leur joug, ils s'armèrent et furent battus. Ce ne fut pas sans peine qu'on en vint à bout; il fallait y porter de l'artillerie et construire des bateaux canoniers. Depuis ce temps, et pour éviter cet inconvénient on a défendu aux indigènes de construire leurs habitations sur le lac."—*Histoire*, Dumont D'Urville, vol iv. p. 607; vol. v. p. 635.

* *Transactions of the Ethnol. Soc.* (new series), vol. ii. p. 28.

they hold that there is no shakiness of the loftily-perched dwelling perceptible, even when crowded with people. . . . They are the invention, not exactly of savages, but of tribes of men in a very primitive stage of culture: such probably were the people who lived in the prehistoric lake dwellings of Switzerland."* Similar habitations are to be found

"Where Orinoco in his pride
Rolls to the main no tribute tide ;"

and on the banks of the Amazon they are also to be seen perched on piles driven into the muddy bottom. The delta of the Parana, which is scarcely above high-water mark, is called the Venetia of South America. Here the houses are built on piles in order to keep the flooring free from the sudden rising of floods. Near Rosario, in Buenos-Ayres, *gauchos*, who have given up horses and horse stealing and taken to canoes and petty larceny, have constructed rude abodes in the swamps along the banks of one of the tributaries of the La Plata.† Captain Burton mentions an African tribe who had erected their dwellings in the same way at a great distance from the shore.‡ Lake Moyhrga or Realmah, in Central Africa, presents at the present day the characteristic features pertaining to the descriptions of an ancient Irish lacustrine site. Cameron§ describes this lake as lying in a small basin embosomed in low-wooded hills, interspersed with patches of cultivated ground. The lake is small—only two miles in length by one in width—the margin girt with floating vegetation corresponding to the reeds, flags, and aqueous growth of more temperate climes. Three villages, besides detached huts, were scattered irregularly over its surface: the huts were built on platforms raised about six feet above the surface of the water, supported on stout piles driven into the bed of the lake; underneath the platform canoes were moored and nets hung to dry. Some huts were oblong in shape, others round, with occasionally, a projecting roof over the door, and they were constructed in a manner precisely similar to those on *terra firma*. The inmates live in these

* *Illustrated Travels*, vol. ii. pp. 19–21. An account of a Visit to the Guajiro Indians of Maracaibo, by A. Goering, Esq.

† *The Crew of the Falcon*, vol. i. p. 132.

‡ *Memoirs of the Anthropological Society*, vol. i. p. 311.

§ *Across Africa*.

dwellings with their fowl and goats, only going ashore in their "dug-outs" to cultivate their small patches of tillage, and to allow their goats to graze. These lake-dwellers were very unapproachable when on land, always running to their canoes and paddling away on the appearance of a stranger. The paddles are described as resembling large circular shallow spoons with long straight handles, the canoes about 25 feet in length. In Eastern Africa also pile dwellings are to be found, as at Mayunga, in Madagascar. At Mirambaus, in Eastern Africa, the score or so of houses composing the village are constructed on posts raised some 8 feet above the ground,* whilst in the neighbouring village of Mujurumbe huts formed of bamboo and cocoa-nut leaf are erected on piles. Thus we see that a habitat on the water has been, or is still, used by races of men not having the slightest affinity to each other, as the boat-living population of China, the lake-dwellers of Central Africa, Europe, New Guinea, Great Britain, Ireland, &c.

Although in 1810 a lake-dwelling in Ireland had been discovered by Mr. William Trench near Roscrea, Co. Tipperary, its original use was not known, no interest was excited, nor was the importance of the event appreciated; and it was not till 1839† that the archæological value of the investigation of lacustrine sites was perceived. The following year Mr., afterwards Sir William, Wilde published an account of the discovery at Lagore, Co. Meath, of the first great lacustrine retreat noticed in Ireland in modern times. It had been anciently the residence of the chief of a small territory in Meath. The formation or eruption of the lake is chronicled in the Irish Annals as having occurred A.M. 3581. Under dates A.D. 848, 933, 967 mention is made of the destruction of the Lagore crannog, and from its being situated near the village of Dunshaughlin, either name is indiscriminately applied to it in the present day. W. F. Wakeman, the only archæologist probably now living who can speak from personal knowledge of the circumstances connected with the original discovery, relates that, when he was with Petrie in the office of the Topographical Department of the Ordnance Survey of Ireland, he recollects how a dealer in

* *The Lakes and Mountains of Eastern and Central Africa*: Elton, pp. 156 and 243.

† In Lewis's *Topographical Dictionary*, published 1837, mention is made of a "wooden house" which formerly existed in Lough Annagh, vol. ii. p. 175.

Irish antiquities, named Underwood, made his appearance day after day, bringing for sale objects of more or less archæological interest, which he stated had been found near Dunshaughlin. Struck by the frequency of the dealer's calls, Petrie decided to unravel the mystery by visiting the place; accordingly, accompanied by Wilde, he reached Lagore House, and there, carelessly thrown on the floor of a barn, he saw a large and miscellaneous collection of antiquities, consisting chiefly of weapons composed of iron—swords, daggers, spear and axe-heads, saws, chains, shears, small culinary vessels, &c. &c; pins and brooches of bronze, articles of bone, and even of wood, all of which had been found by labourers engaged in making a drain through the ancient lake bed. Petrie endeavoured to procure some of these for his collection, but the steward, or caretaker, in the absence of his employer, would not part with any; and when the dealer returned after a short lapse of time the collection was already greatly scattered: many objects had been presented to curiosity-seekers in the neighbourhood, and many, it was supposed, went to England. A few, however, found their way to the Royal Irish Academy, to Dean Dawson, Lord Talbot de Malahide, and Petrie.

For some years after the drainage operations, the soil of Lagore remained unturned by the spade; but in 1846, 1847 and 1848, the site of the crannog was reopened by men engaged in the process of turf-cutting, and, as on the previous occasion, quantities of bones were exhumed, and with them a surprising number of antiquities, together with remains of the ancient stockading, and the ruins of several structures evidently used as huts; one of them is thus described by W. F. Wakeman: "Let the reader imagine a foundation formed of four roughly-squared planks of oak, each about twelve feet in length (so arranged as to enclose a quadrangle), the ends of which were carefully fitted together. From the angles of this square rose four posts, also of oak, to the height of about nine feet. In these grooves were cut, into which roughly-split planks of oak had been slipped so as to form the sides of the house; the irregularities between the boards were tightly caulked with moss; a low and narrow opening in one of the sides had evidently served as an entrance. There were no traces of window or chimney."*

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. v. (4th Series), pp. 325-26.

Lagore crannog differed from others brought to light at a later date, in not being either submerged or surrounded by water at the time of its discovery. Wilde describes it as consisting of a circular mound of about 520 feet in circumference, slightly raised above the surrounding bog or marshy ground, which forms a basin of about a mile and a-half in circuit, and is bounded by elevated lands. "The circumference of the circle was formed by upright posts of black oak, measuring from six to eight feet in height; these were mortised into beams of similar material laid flat upon the marl and sand beneath the bog, and nearly sixteen feet below the present surface. The upright posts were held together by connecting cross-beams, and (said to be) fastened by large iron (?) nails: parts of a second upper tier of posts were likewise found resting on the lower ones. The space thus enclosed was divided into separate compartments by septa or divisions that intersected one another in different directions; these were also formed of oaken beams in a state of great preservation, joined together with greater accuracy than the former, in some cases having their sides grooved and rabbeted to admit large panels driven down between them."

It may be inferred that fire was the final agent of destruction, as almost everywhere amongst the timbers lay half-consumed logs and numerous pieces of charcoal. Unfortunately, investigations on the site do not seem to have produced results such as might have been expected, owing principally, as was supposed, to want of friendly co-operation on the part of those engaged in searches. The "find" is now widely dispersed, and can never be re-collected; but the Petrie Museum deposited in the Royal Irish Academy, as well as some private cabinets, would still furnish material for scores of illustrations.

At about the same date as the Lagore crannog, that of Lough Gur, Co. Limerick, became visible when the waters of the lake were lowered. The existence of this artificial island in ancient times was traditionally known to the neighbouring peasantry: the stones by which it was overlaid were in places distinctly visible to a person passing over them in a boat when the lake level was low and the water calm. A large tripod composed of iron was at times plainly to be seen, and had attracted Mr. Wakeman's attention; but, from superstitious feelings on the part of the boatmen by whom he was accompanied, no attempt at its recovery was then made; it is said to be now in the collection of the Royal

Irish Academy. A number of antiquities have been from time to time obtained from the site, and there was a vast collection of bones; but, according to the evidence of a clergyman then living in the neighbourhood of Bruff, there does not appear to have been any vestige of staking on or around this crannog. Other remains of the same class were brought to light in rapid succession, so that in 1857 no less than forty-seven of them had been recorded: since that time the number has increased to about 200, and every succeeding year adds to the total.

In 1853-4, owing principally to the writings of Keller, the entire attention of archæologists was attracted to the lacustrine remains of Switzerland, and it was the more easily diverted from the Irish sites by the pronouncement of Sir William Wilde, that no stone, and but few bronze weapons, had been found in them: he also suggested, that from the ninth to the seventeenth century might be considered the probable date of the lacustrine period in Ireland. These theories have since been abundantly confuted; but they served at the time to check investigation, because detracting from the impression of antiquity.

Crannog, derivation of the word.—In the Irish Annals, lake-dwellings are called crannogs, derived from the term *crann*, which signifies a tree. That word, always spelled with a double *n*, is in Irish generally applied to a tree with foliage and branches, as *crann na coille*, *trees of the wood*, but in its primary meaning it refers to some massive object of timber standing erect—as stems of the forest, or a ship's mast, which is also called *crann*. The last syllable in *crannóg*, *i. e.* *oí*, is the terminal form of numerous Irish words; “sometimes it carries the force of a diminutive, but more frequently not. *Crannóg* is no doubt formed in the same manner as *cuapóg*, the name usually applied to a wild bee's nest, and derived from the noun *cuap*, any conical hollow with the diminutive ending *oí* attached thereto. In some country places, the old kind of pulpit or form was called *crannóg*, and in others *crannghail* or *crannghaoil*, a word of somewhat similar meaning. This latter word, too, was the Irish term for a hurdle, and was commonly used for those wicker-chimneys so common formerly in country cottages.”*

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. (3rd Series), pp. 220, 21, Rev. W. Kilbride.

It is doubtful whether the term *crannog* was originally applied to the timber framework of which the island was constructed, or to the wooden huts erected on it; though now-a-days it is generally understood to include the whole structure, both island and dwelling. In its topographical sense, the word is applied to wooden lake dwellings, but in another sense the Anglo-Irish employed it to designate a basket, hamper, or measure of a certain size for measuring or gauging grain or corn.* G. H. Kinahan states† that, although “crannog” is now the generally-accepted appellation for the ancient lake dwellings of Ireland, it is, nevertheless, “a modern term introduced to supply the place of the ancient one, which is unknown or unrecognized.”

Lake dwellings bore in Scotland the same designation. In a document dated 14th April, 1608, directed to State officials, concerning the surrender of some rebellious clans, it is ordered, that “the haill houssis of defence, strongholdis and *cranokis* in the yllis pertaining to thame and their foirsaidis sal be delyveret to his Maiestie,” &c. Although the term *crannog* is to be found in the Irish Annals, yet in the earliest entries these dwellings are designated simply as *Inish*, i. e. island: for instance, in an old Irish ms., “The wars of the Gaedhil with the Gaill,” it is recorded that, in the year 1013, Brian Boru repaired *inir locha* *Ṣaṛi*, i. e. *the island* of Lough Gur, county Limerick, which is one of the most important as also apparently one of the most ancient Irish lacustrine sites; for, as before stated, remains of the reindeer, the *Megaceros Hibernicus*, and bear, were found in the lake bed.

Crannog, a common Townland Name.—There are numerous localities throughout Ireland in which the term “crannog” is embodied in the name, and where, consequently, must have been formerly a lake or swamp, with its accompanying artificial island, although in some cases the lake has now disappeared, and the swamp has been drained. In most of the districts in which these islands were found several small lakes are clustered together. In Connaught, near the demesne of Longford, county Sligo, the residence of Sir Malby Crofton, Bart., in a small pond, almost dry in summer, there is an islet, still called by the country people “crannog:” it has bequeathed its name to the townland in which

* Joyce, *Irish Names of Places*, 4th ed. p. 299.

† *Geology of Ireland*, p. 278.

it is situated, *i.e.* “Lochanacrannog,” signifying the *little lake of the crannog*.* In the parish of Cloonclare, county Leitrim, is a locality called Crannog Island. In Connemara, county Galway, there is an island in Ballinahinch lake which has given name to a parish and to a barony, the word Ballinahinch signifying *village of the island*. In Ulster there is a townland in county Tyrone called Crannog. In county Donegal, Crannog-boy, or the *yellow lake dwelling*, was the head quarters of The O’Boyle, a steady supporter of the O’Donnells. In county Antrim, Lough Crannagh, situated over Fair Head, probably derives its name from a small artificial island which lies in the centre of the lake.† In Loughmacnean, county Fermanagh, are several artificial islets, one of which is called “Crannog Island.” In Leinster there is a townland in county Kilkenny called Cronoge. In Munster there is a place in the parish of Ardagh, county Limerick, called Coolcranoge, *the angle of the lake dwelling*. “Crannog Island,” “sunken island,” “drowned island,” “Inish,” or “the island,” are common designations for diminutive artificial islets, showing themselves above water only during summer drought in many lakes throughout the kingdom. There is hardly a large sheet of water to which is not attached a tradition of a frightful outbreak of flood, covering what was formerly “a town;” or which does not possess its legend of an enchanted well, which, consequent upon some affront offered to its guardian spirit, covered the valley, its inhabitants, and houses. May not these traditions be traceable to lingering remembrance of former lacustrine habitations, for Giraldus Cambrensis, writing in the twelfth century, described the tradition that then prevailed in the north of Ireland, of waters having overwhelmed the plains now occupied by Lough Neagh, a locality the most thickly studded with these remains; and the legend has been immortalized by Moore, who thus alludes to it:—

“On Lough Neagh’s banks as the fisherman strays,
When the calm clear eve’s declining,
He sees the round towers of other days
In the waves beneath him shining.”

* The peasantry of the neighbourhood say that “crannog” signifies the hopper of a mill, and that in all probability there was formerly a mill there. This is the popular explanation given of every crannog in the kingdom.—*MS. Letters, Ordnance Survey.*

† *Proceedings R. I. A.*, vol. vii. p. 157.

Similar legends of submerged towns are prevalent in the south of Scotland, on the littoral facing the Irish coast. In the neighbourhood of Carlingwark Loch, Kircudbrightshire, in which are sites of crannogs, there has been from time immemorial a tradition that "there had been a town in the loch which sunk or was drowned;"* whilst a Scotch writer states that, "amongst other points of coincidence between Scotch and Irish crannogs may be noticed a tradition connected with some of them, common to both countries, which seems to have arisen from the submersion of the island homes by the rising of the waters in the loughs."† The same idea is held by the natives of Central India: "from this hill is heard the sound of fairy drums; in that lake are seen reflected the ruins of a buried city."‡

The tradition of towns buried beneath the waters is not confined merely to the lakes of Ireland: there is the beautiful fable of the City of Gold, hid beneath the angry ocean, sometimes seen, but ever in different localities:

" Yet at times the waves sever,
And then you may view
The yellow walls ever
'Neath the ocean's deep blue."

Submarine Crannogs.—After a very high tide at Ardmore, near Youghal, the waters retired more than customary, disclosing the fact that this particular portion of the sea-shore had been the site of a forest, as remains of trees were found in various parts of the submarine deposit. This submerged tract extends to between the four and five fathom line, but it has not been ascertained to what further distance it may stretch seaward. A bank of shingle having shifted by a change of current, laid bare the substructure of an undoubted crannog: at high water it was covered by the tide to a considerable depth. Either this dwelling had been erected when Ireland was joined to Great Britain, or it was existent when Ireland was at a greater elevation above the sea, and therefore of greater extent than at present. The theory is enunciated by eminent geologists that many of our present harbours had been

* *Old Statistical Account*, vol. viii. p. 304.

† John Stuart, *Notices of Scottish Crannogs*, p. 33.

‡ *Edinburgh Review*, No. 275, p. 207.

inland lakes in pre-historic times, and thus the Bay of Ardmore may have formerly presented a similar appearance to the Gulf or Lake of Maricaibo in Venezuela at the present day.

In the Irish Records, lake dwellings are likewise designated "Stockaded Islands," and in the *Ulster Inquisitions* of 1605, the term applied to them is *insula fortificata*. Although antiquarians have differed in opinion respecting the age of these remains, yet after patient analysis of the characteristic features of the numerous excavations made in recent years, the weight of evidence seems to indicate that these constructions *were of all ages*, some being very ancient; it is quite apparent that they have been built and rebuilt, and in them have been found implements of stone, bronze, and iron in their respective strata. It would seem, indeed, that the "age of bronze" had in many instances largely overlapped that of iron. The chronology of this period is a subject that has not as yet been determined, and the time when it commenced and when it ended is still unsettled.

Favourite Sites for Crannogs.—Marshes, small loughs surrounded by woods, and large sheets of water, were alike suitable for the home of the Irish lake-dweller, his great and primary need being protection; he was bound by no conventional engineering rule, he did not exclusively employ wood, but appears to have been guided by surrounding circumstances. On peaty or muddy sites a wooden substructure was essential; on hard bottoms, stone, gravel, or earth were, if convenient, employed. As providing good fishing grounds, the entrance or exit of stream from lake was a favourite site, and natural shoals thus placed were eagerly selected.

Mode of Construction of.—Having decided on the position, the *crannog* builder set to work by driving stakes into the bottom of the lake in a circle of from sixty to eighty feet in diameter, a considerable length of the stake sometimes projecting above the water; these were in many instances joined together by horizontal beams, the interior filled up by branches of trees, stones, gravel, earth, and bracken. Often an inner row (or more than one) of piling is found about five feet distant from the outer, and piles are driven in various parts of the interior, either to consolidate the mass or to act as stays for the walls of the dwelling. Next were placed one or two layers of round logs, cut into lengths of about six feet, generally mortised into the upright piles, kept in position by layers of stone, clay, and gravel. In some cases, where the foundation was

soft, the superincumbent layers of timber were of great depth; in other cases, where the bottom of the lake was firm, the platform of timber was confined to a portion of the island. The side most affected by the action of the water was frequently strengthened by rows of piles, sometimes five or six deep, as well as by a breakwater of stones.* On the foundation, when raised sufficiently above the water, the dwelling was erected; the hearth was in the centre of the island, for in almost every case a collection of flagstones has been discovered in the interior of the enclosure, bearing on them marks of fire. At times several hearths occur. In some instances there are indications of these structures having had additions made to their height at various times, either to keep pace with the chronic rising of the level of the lough; or, taking into consideration the compressible nature of the component parts of the foundation, the island may have required increased elevation, owing to the effect of natural subsidence. The enormous amount of wood employed in the formation of a crannog, despite the mass of stones and other material with which it was laden, must have had at first a buoyant tendency, but according as the wood became completely saturated with water, consolidation of a more or less pronounced character would, in the course of time, become observable. The stones deposited over the lower strata of fern, bracken, and branches, were indubitably used to compress and solidify the substructure, as likewise were the stones on the upper strata used for a similar purpose. Considerable ingenuity was displayed in the formation of these island homes, which were frequently constructed in a depth of twelve to fourteen feet of water; and, apart from having served in their day as secure retreats for large numbers of persons, they have proved their durability by resisting successfully the ravages of time, which may be reckoned by centuries.

The Scottish lake dwellings were formed in almost identically the same manner; in fact, the structural details are so completely analogous as almost to necessitate the belief of their having been erected by the same race. Up to the present time, out of the fifty-three lake dwellings constructed of timber, discovered in Scotland,

* In the year 1508, it is of record that a Scottish monastery granted a lease of a crannog, one of the covenants being that the occupant was to place a certain quantity of stones outside the piling in each year, to protect the structure from the destructive influence of the waters of the lake.

thirty-three have been found in Wightown,* Kirkcudbright,† Dumfries,‡ Ayr,§ and Bute,|| in south-western Scotland, whilst the greater number of those found in Ireland are situate on the opposite coast, *i. e.* in Ulster.

G. H. Kinahan, who explored crannogs in four localities,¶

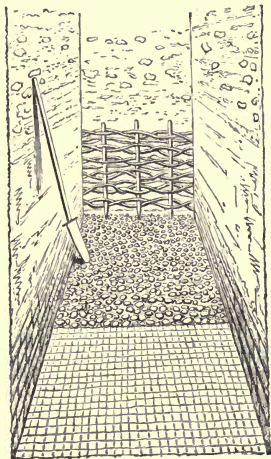


Fig. 2.

Excavation in a Crannog in Loughrea, showing wicker-work wall and basket flooring.

states that in all of them floors of wicker- or basket-work were found. The first discovered by him was in the large crannog of Loughrea. In one of the excavations there became apparent a perpendicular single wicker-work wall or partition that went down to the level of the basket flooring; from it, for eleven feet towards the north there was a rough pavement, on which was a thin layer of gravel. The surface of the pavement was on a level with the basket flooring. The rods of which it was composed were soft and rotten—in fact reduced to mould, gave no resistance to the spade, and might easily escape ordinary observation. The heads of the piles forming the par-

tition walls may, according to this authority, be seen in an unexcavated crannog near Strokestown, county Roscommon. There seems,

* *Wightown*: Barhapple, Barlockhart, Barneallzie, Castleloch, Dowalton, (5,) Eldrig (3), Loch-Inch-Crindel, Machermore (2), Merton, Sunonness.

† *Kirkcudbright*: Barean, Carlingwark (2), Loch-Kinder, Loch-Lotus, Loch-Rutton.

‡ *Dumfries*: Black Loch, Corncockle, Friar's-Carse, Lochmaben.

§ *Ayr*: Buston, Loch of Kilbirnie, Lochlee, Lochspouts.

|| *Bute*: Dhu Loch, Loch Quien. The remainder of the Scottish sites are situated as follows:—

Aberdeen: Banchory, Loch Canmore. *Argyll*: Kielziebar, Ledaig, Loch-na-Mial (Mull), Lochnell. *Forfar*: Loch of Forfar. *Inverness*: Loch-in-Croy, Loch Lochy. *Lanark*: Greenknowe. *Linlithgow*: Loch Cot. *Moray, Nairn and Elgin*: Loch Flemington, Lochindorb, Loch-in-Dunty, Loch of the Clans, Loch Spinie. *Perth*: Loch Rannoch. *Ross*: Loch Achilty, Loch of Kinellan. *Stirling*: Loch Lomond.

¶ Namely at Loughrea, county Galway; at Ballinlough, near Marble Hill, same county; at Lough Nahinch, on the borders of Tipperary and King's County, and Lough Naneevin, West Galway.

therefore, reason to suppose that all piles situated in the interior of crannogs point out the direction of the partition wall or walls of the habitations, as, whatever may otherwise have been the mode of construction—whether of wicker-work or rods—they were supported at intervals by piles. May not the so-called basket flooring have been a portion of the wattle walls which had fallen down? Other experts on the subject have been unable in their explorations to detect the presence of wicker-work floors; but in the year 1858, in a small island about 200 yards from the shore, in the lake formed by the Shannon at Castleforbes, county Longford, the Earl of Granard discovered traces of stockading and piling, together with a coarse sort of wicker-work.* This, however, was in the encircling palisades, and W. F. Wakeman has recently noticed similar remains around the crannog of Lisnacroghera.

Stone Lake Dwellings.—On some of these artificial islands the last structures seemed to have been formed of stone: for example, in Loughtamand, county Antrim, a stone house or castle, the stronghold of the MacQuillans, replaced a circular structure composed of wood; a similar change seems to have been made in one of the crannogs of Loughrea. The transition from buildings of wood to those of stone has also been observed in Scotland. Mention may be made of a few stone-built island fortresses; and although, strictly speaking, the term “crannog” is scarcely applicable, yet many of them that present a modern appearance are structures erected on ancient foundations. In parts of Galway and Mayo, where timber was either scarce or of stunted growth, buildings of stone seem to be most numerous, whilst in Ulster they occur in the rocky districts of Antrim and Donegal.

Goromna Island, in Lough Hilbert, county Galway, is a peculiar structure, which, though not formed of wood, is somewhat allied to a crannog, being wholly or in part an artificial island. A large and good specimen, *Caisten-na-Caillighe*, or the Hag’s Castle, stands in Lough Mask. It is one of the oldest fortresses mentioned in the Irish Annals, being noticed at the date A.D. 1195. In 1233 the Anglo-Norman castle erected on its site was demolished by Felim O’Conor, chief of Connaught, and so late as 1586 it was with difficulty captured by Sir Richard Bingham. This great circular

* *Proceedings R. I. A.*, vol. vii. p. 150. This crannog may be said to form portion of the Strokestown group; excavations were made, and several bronze pins found.

enclosure, ninety feet in diameter and thirty feet in height, occupies almost the entire island. The walls, which are still eight feet in depth at top, exhibit the characteristic inward slope peculiar to the cashel; its situation near the mouth of a river (the Robe) is characteristic of crannogs. In Lough Bola there is a curious cashel, or stone lake dwelling; the accompanying sketch gives an idea of its present appearance. A primitive habitation lies in Lough Cam,



Fig. 3.—Stone Lake Dwelling in Lough Bola.

north of Roundstone, and two miles west of Toombeola. All these islands have a crannog-like aspect. To the south of Ballinahinch lake lies that of Ballinafad, and in its northern portion there becomes visible, when the water is low, a circle of stones and a small island, evidently the remains of some artificial structure. O'Flahertie, in his *History of Iar-Connaught*, mentions that the ancient castle of the O'Flaherties of Bunowen, in the lake of Ballinahinch, was built on an artificial island: this had been constructed by one of the original septs long prior to the occupation of the country by the O'Flaherties, who in their turn were driven out by the Martins.*

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. pp. 11-13 (4th Series)
—G. H. Kinahan.

Theory of Crannogs being only Temporary Refuges.—The opinion has been frequently advanced that crannogs were merely refuges used in case of hostile incursion—not a general or habitual residence; and if a rath chance to be in the immediate vicinity, it is pointed out as the abode of the chief on shore. The great mass of bones, however, and remains of household gear, found upon and around some of the sites, point conclusively to their having been places of residence for long and various periods, and many of them bear signs which denote their having been often demolished, burnt, and rebuilt, the Celt clinging to his watery home with as much pertinacity as in latter days he clings to his cottage on terra firma. Keller was of opinion that the great distinction between the continental pile dwellings (*pfahlbauten*), and the crannogs of Ireland and kindred lake dwellings of Scotland, is that the latter served merely as places of refuge for chieftains, their families, and property, *i. e.* strongholds belonging to individuals, whilst the Swiss lacustrine dwellings were inhabited century after century by groups of families; here they fabricated their pottery, their utensils, their wearing apparel, their fishing implements, their weapons of warfare; and hence in Swiss waters rows of huts are found, each furnished with its hearth and its weaving loom. Although Irish and Scottish lacustrine dwellings may have been the abode of chiefs, yet the clan clustered around them, for in many Irish lakes a large crannog is observable, whilst in close proximity—sometimes connected with it—are others of smaller size and meaner construction; might we not fairly surmise that the larger one was the abode of the chief, the others those of his followers? The theory that these dwellings were places of merely temporary refuge can be refuted on many grounds. The evidences of repeated renovations and re-erection of crannogs after having been burnt,* also the traces of cattle, which appear to have been kept in them, the enormous quantity of bones contained in the kitchen middens, the hearths, the remains of fire, of cooking utensils, of spindle whorls, of household gear, the domestic arrangements made in each hut for the accommodation of a family, the

* Toome Bar, county Antrim; Rahans, county Monaghan; Drumkeery and Cornagall, county Cavan; Lagore, near Dunshaughlin, county Meath; Nahinch, county Tipperary; Cloonfinlough, county Roscommon; are examples of crannogs which show visible traces of having been consumed by fire, and some of them of having been rebuilt.

various articles for personal adornment and for amusement, all tend to denote continuous occupancy; finally, we must bear in mind the enormous expenditure of time and labour that would be required for erection of what was, on such a theory, to serve only as a place of temporary shelter.

Palisades and Dwellings.—Palisaded fortifications are unquestionably very primitive. Around the cyclopean wall of Dun Ængus and other pre-historic forts in the Isles of Arran, county Galway, are found palisades, or *chevaux-de-frise*, of sharp-pointed stones, and such defences have in all ages proved effective under skilful management. Even in the present advanced state of military science, the various wars in New Zealand have demonstrated the formidable nature of the Maori pah or fort. The outer range of piles around crannogs rose considerably above the water, and thus formed a stockade or breastwork for repelling an attack from enemies. The Lord Deputy Sidney, describing to Elizabeth a repulse of her troops from one of these retreats, says that at a distance it did not appear formidable, as it was simply encircled with a stout palisade bristling with rows of sharpened stakes; but when assaulted, the soldiers found it impossible either to scale or undermine it. This style of defensive work was of ancient origin in Ireland, for the Annals state that, in the year 990, the island as well as "the dreach and rampart of Lough Cimbe" (now Lough Hackett, county Galway) were swept away by a violent storm.

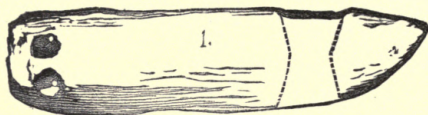
Within the area enclosed stood the hut or huts in which the families lived; the stockade served equally for shelter and defence, fulfilling the same purpose as did the circumvallation of the rath or *doon* on terra firma. Edifices constructed of logs, of wattling, and hurdles daubed over with clay, and thatched with reeds, were in early times considered characteristic of the Irish; even public buildings were constructed of these materials. Bede states that an Irish monk, who had been elected Bishop of Lindisfarn, built a church for his see "altogether of sawn oak, and covered it with reeds, after the manner of the Scots" (*i. e.* the Irish). We need not, however, refer to history, or depend upon conjecture, in order to reconstruct these island dwellings; for the foundations, and even some of the log walls, have been exposed to view. Good examples are presented by the flooring of an oblong house at Drumaleague, county Leitrim, and at Cargaghoge, county Monaghan; remains

of a wooden hut at Kilnock, county Antrim ; and the following in county Fermanagh—mortised beams at Loughavilly, a house at Gortalough, angle posts at “The Miracles,” and lower framework of a house at Ballydoolough. At Kilnamaddo, in the same county, log huts were found buried under seventeen feet of peat ; these were practically almost perfect, wanting nothing save the roof ; they were very low, the side walls scarcely four feet in height, and they might be looked upon rather as lairs for sleeping in, than dwellings in the modern sense of the word ; indeed, the primitive races of Ireland, whether building in stone or wood, made use of low roofs and consequently low doors. The openings left for egress and ingress were probably closed by hurdles of wicker-work, as demonstrated by the old Irish proverb, *Fuair se air snibhal eadar cliath a’s ursainn* (he got off ’twixt hurdle and door-post), equivalent to the saying, “he escaped by the skin of his teeth.”

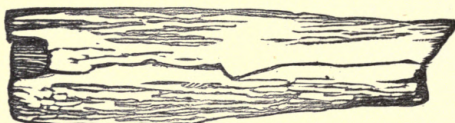
A considerable portion of the townland of Kilnamaddo (*the wood of the dog*) had apparently, in olden times, formed the basin of a sheet of water, and upon one of its shoals some primitive tribe had erected a habitation. The piling can still be traced, but the chief antiquarian interest attached to the discovery consisted in the remains of the huts already referred to, and which were constructed of oak beams. They were two in number, stood about fifty feet apart, and somewhat resembled the hut exposed to view by Captain Mudge in Donegal, but differed from it in not being divided into an upper and lower story. The Kilnamaddo huts were quadrangular, and the larger and more perfect specimen measured on the outside eleven feet six inches by ten feet. To make the structure, four massive posts of oak, averaging seven feet in length and seven feet in circumference, were set in the ground. These timbers, near their upper ends, have mortised holes averaging eleven inches in height by eight and a-half in breadth, through which passed the ends of beams to which slabs of oak were attached, and the floor was also composed of oaken planks. The roof, as well as a great portion of the sides, did not remain *in situ* at the time of the discovery, but a number of timbers found immediately adjoining each of the structures were admirably suited for the purpose of forming side walls and roofing. The lower frame of the work appears to have been very similar to that upon which the roof had rested. In the lower portions of the four upright posts were very curious mortise holes, evidently in-

tended for the reception of beam ends. The sides of this edifice were retained in position and pressed to the frame below by a row of small, well-sharpened piles; no sign of pinning or grooving in the upper portion of the frame could be discovered, therefore the conclusion may be drawn that the huts were originally built within an excavation, the peat was then heaped against the sides, probably even over the roof, and a small passage left as an entrance. In short, it was a structure of wood, but otherwise analogous to the stone-lined chambers and passages so generally found in raths. Almost in the immediate neighbourhood, may still be observed a subterraneous work of uncemented stones, styled "St. Lasser's Cell." In it are three very small, low-roofed chambers, connected by passages equally low; but there is no reason to suppose they had communication with any other structure, and, although named after a "saint," they rather convey the impression of pre-Christian origin. Unlike the remains of most crannogs, that of Kilnamaddo presented no indication of having been destroyed by fire; had such been the case, the posts would have shown undoubted signs of charring. Evident traces of a kitchen midden were discovered in the bog close to the hut, but at a level slightly above it. The height of the interior of the most perfect of the huts, without making any allowance for a sloping roof, being only four feet, they would thus correspond to the souterrains of a rath. It has been suggested that they were used by the crannog occupants only for the preservation of perishable commodities; and in seeming corroboration of this theory, large lumps of the substance called "bog-butter" were discovered in them carefully rolled up in cowhide.

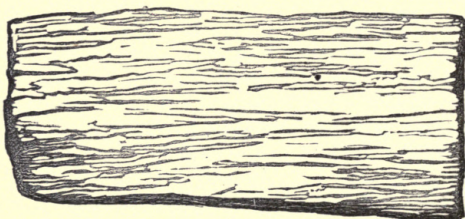
It is difficult to arrive at even an approximate estimate of the age of these curious structures: the mortise-holes, pierced clean through timbers more than seven feet in circumference, could hardly have been formed by the aid of stone hatchets or chisels: several of the piles and other portions of the work show traces of long, clean cuts, such as are given by sharp metallic tools; yet the only implements found here were of stone, and by the aid of such it is possible that some of the timbers were more or less worked. The roots and part of the trunk of a yew were found *in situ* in the bog, on a higher level than the roof of the more perfect hut. It has been computed, from the girth of this yew, that it would take at least one thousand years to attain the bulk it showed when first laid bare, and the



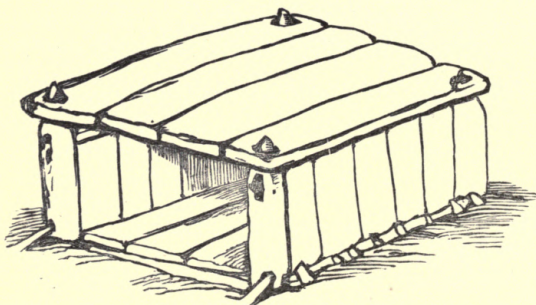
2.



3.



4.



Crannog Hut, Kilnamaddo. Restored from existing Remains.

eleven feet of bog by which it was covered would take at least another thousand years to grow.*

Plate I., fig. 4, represents the most perfect of the Kilnamaddo huts restored. When the drawing was taken, all the timbers in the illustration were on the spot, and some of these retained their original position. Fig. 3 is a slab of oak measuring six feet by two feet nine; it is not so thick as fig. 2, which represents a slab of oak five feet ten inches in length by one foot six inches in breadth, the depressions at its broader end being five inches by six, and it is one foot two inches in thickness; this and fig. 3 were found lying by the side of the hut, and it is conjectured that they formed a portion of the roof. Fig. 1 represents an angle-post five feet six inches in length, and four feet ten inches in circumference. This style of construction appears, as far as is yet known, to have been confined to the north-west portion of Ireland, the two somewhat similar huts being those discovered by Captain Mudge in Donegal, and by Mr. Morant in Monaghan.

A representation is given (plate II.) of the wooden hut discovered in 1833, by Captain W. Mudge, R.N., in the bog of Drumkelin, parish of Inver, county Donegal, it being the most perfectly preserved primitive dwelling of that material yet brought to light in Ireland. It was surrounded with a staked enclosure; portions of the gates also were discovered. The flooring of the house (plate III., fig. 3) rested on hazel branches covered with a layer of fine sand; a paved causeway (plate III., fig. 4), over a foundation of hazel branches and logs, led from the door of the house to a fireplace, on and around which lay ashes, charred wood, and half-consumed turf. This unique structure was nearly square, twelve feet wide, and nine feet high, formed of rough logs and planks of oak, apparently split by wedges, the interstices filled with a compound of grease and fine sea sand. One side of the hut, supposed to be the front, was left entirely open. The framework† consisted of upright posts and

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. v. (4th Series), pp. 327-336.—W. F. Wakeman.

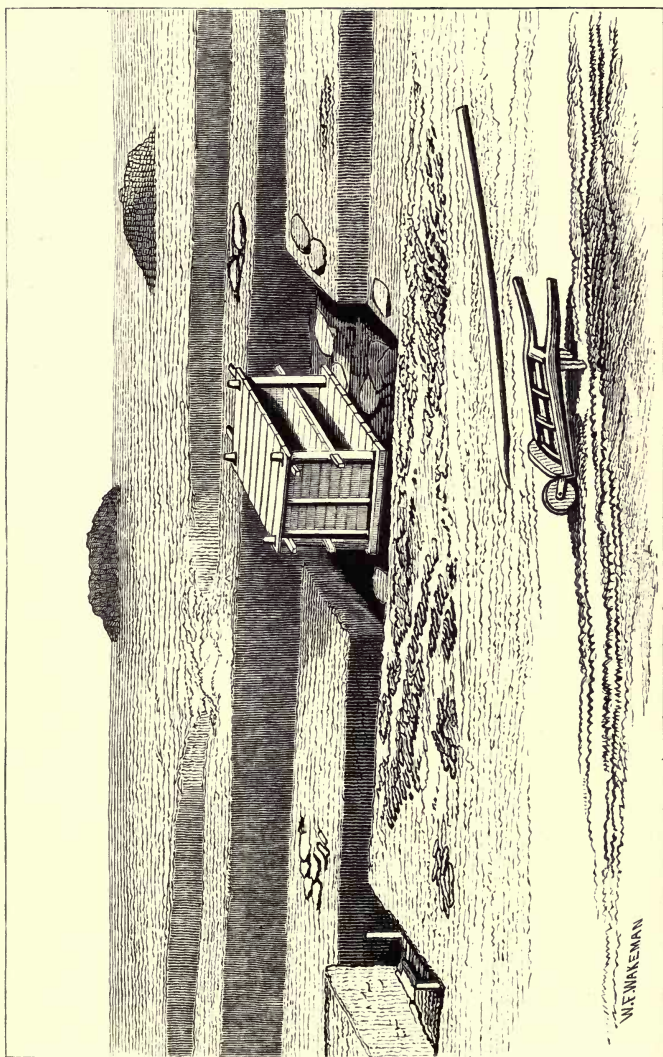
† “The framework was composed of oak logs, as shown in the sketch (fig. 1. side elevation); the main sleepers, one on each side, were principal pieces, and rested on the sand. These logs were made from a large oak-tree, split in two, with the round part upwards; they measured, when put together, twenty-three inches in diameter and twenty-four feet in length; into these the upright pieces, or posts *B* of the frame, were mortised, *p*; and the end of the post protruding through the mortise in the sleeper

horizontal sleepers, mortised at the angles, the end of each post being inserted into the lower sleeper of the frame, and fastened with a large block of wood. The discoverer states that the mortises were very rough, as if made with a kind of blunt instrument, the wood being bruised rather than cut, and it may be inferred that a stone celt found lying upon the floor of the house was the identical tool with which the mortises had been formed (plate III. figs. 6 and 7). By comparing the chisel with the marks of the tool used in making the mortises and grooves, it was found to correspond exactly with them, even to the slight curved surface of the chisel; but the logs had evidently been hewn with a larger instrument in the shape of an axe, undoubtedly of stone, as the marks, though larger than those the chisel would have made, are of the same character, being somewhat hollow and small cuts, not presenting the smooth surface produced by a common iron axe. A second but larger stone was also found on the floor, which, being ground at one end to an edge, was probably used as a wedge for splitting timber (plate III. fig. 5). There was also a flat freestone slab, measuring three feet by one, and two inches thick, having a hollow in the middle about three-fourths of an inch deep; large quantities of whole and broken nuts were found near it, together with several round shingle stones. The hollow in the flag is supposed to have been a receptacle for the nuts, the small stones being used as hammers to break them.

The interior of the structure was divided into two stories, *each about four feet in height* (plate III. figs. 1 and 2); its flat roof was sixteen feet beneath the original surface; therefore, nearly twenty-five feet of bog must have grown around it since its first erection; a piece of a leather sandal,* a flint arrow-head and wooden sword were found; the latter relic was quite perfect when dug up, it was subsequently broken into two pieces, one of which—the pointed end

A, was forelocked by a large block of wood below, as shown, fig. 1. The mortises were roughly cut, as if they had been made by a kind of blunt instrument. The planks which formed the sides *D* were laid edgewise, one upon another, the lower one resting in a groove cut in the sleeper *A*, as shown in fig. 2, and the but-ends on a log of wood mortised into the framework, as in fig. 1. The planks butting home against the supports, were more firmly fixed by the two uprights, which passed through a hole in the cross-beam *c*, fig. 1, and slipped into the mortise in the sleeper."

* A somewhat similar "find" was dug up in one of the crannogs in Loch Dowalton, Wigtownshire.—*Ancient Lake Dwellings of Scotland*, p. 49.



Crannog Hut discovered at Inver, Co. Donegal. Drawn from the Model in the Museum, R. I. A.

Fig. 1.
Side Elevation

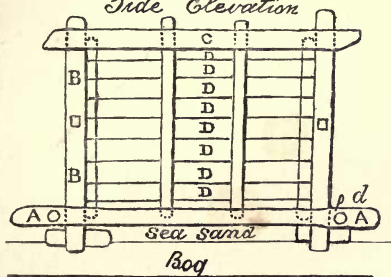
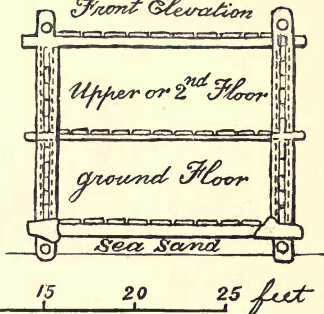


Fig. 2.
Front Elevation



Front and
ground View
of House.
Bog under
the planks.

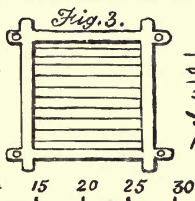
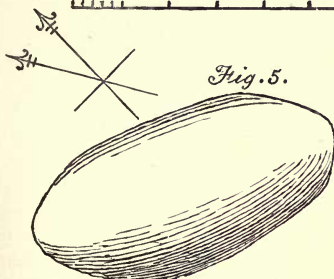


Fig. 4.



Ends of a Floor protruding from the sides of a section of the Bog, but not yet examined. H & H are the ends of two beams or sleepers with a mortise cut in each apparently for the uprights of a doorway. The small... on each side is to show the heads of small stakes about 18 inches long driven into each side to steady the sleepers

Fig. 5.



Stone supposed to have been used for splitting timbers

Fig. 7.

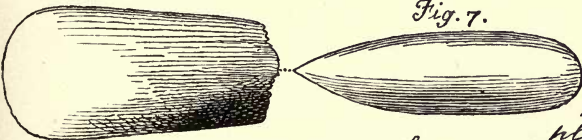


Fig. 6.

4 inches.

Stone Hatchet found.

Fig. 8.



Hearthstone placed on layer of sand where a great quantity of broken nut shells were found and also charcoal

—may be seen in the Museum, R.I.A., and is here represented. (fig. 4); the portion remaining measures twenty-seven and a-half inches in length, its greatest breadth being three inches.



Fig. 4.
Remaining Fragment
of Wooden Sword
found at Inver.

The depth at which the hut was buried, and the flint and stone implements found in it, seem to prove unquestionably its extreme antiquity; added to which, upon the level of the floor, and extending all around, were the corksers of a forest of hard wood trees that had co-existed with the occupation of this structure. Wood, in large masses, when either thoroughly immersed in water or buried under ground, lasts longer in a semi-decomposed state than is generally supposed, for calcined ends of timber antæ and rafters were dug out from the pseudo site of Troy.*

At the time of Captain Mudge's discovery, so little was known on the subject of lake dwellings, that many were the conjectures floated in connexion with this Donegal "find." Now, however, this famous log house is pronounced to be simply a very well preserved example of the ordinary crannog hut of an extremely early period, *i.e.* of a time when axe-heads of stone were still in use, and when metal, if known at all, was so precious that ordinary weapons were occasionally at least formed out of hard wood. That the structure in question occupied a crannog will be sufficiently obvious to any inquirer who examines the model of it preserved in the Royal Irish Academy. The stakes represented *in situ*, to the left of the illustration (plate II.), are plainly remains of the stockade, one timber of which appears in the foreground; and, in the sides of the drain made to carry off the water from the excavation, Captain Mudge observed a number of ends of large oak logs placed in regular order, portion evidently of the usual crannog foundation.†

* "These jambs, of which there were six at each extremity, stood on well-wrought foundation stones, but of course in a calcined state."—Schlieman, *Troja*, p. 80.

† *Archæologia*, vol. xxvi. p. 361. *Dublin Journal*, p. 381–83, 1836.

In 1867, the remains of a dwelling brought to light in the townland of Cargaghoge, near Carrickmacross, county Monaghan, is thus described :—*A man engaged in cutting turf, having uncovered the ends of three planks of oak, the circumstance, when reported to Mr. G. Morant, induced him to have the superincumbent bog carefully dug away, and after some hours' work the floor of a house became exposed to view; as the explorers approached its level, they were particularly careful to examine

the layers next to it, in the hope of discovering some relics of its inhabitants; but, beyond ashes, nutshells (both in considerable quantities), some pieces of very rude pottery, and a few small worked flints, nothing was found. The floor, as may be seen by the accompanying engraving, is approached by a narrow causeway of black oak planks, similar to those of the floor itself, very rudely formed, of unequal size, and laid loosely, without any apparent fastening, except by occasional posts, as marked on the sketch. At the end of the causeway nearest to the floor are the remains of posts, which probably formed the entrance to the house, and at one



Fig. 5.

Sketch of Ancient Floor in the townland of Cargaghoge, barony of Farney.

From A to B, 18 ft. 4 in.; from C to D, 17 ft. 6 in.; from B to E, 11 ft. 6 in.; F, fireplace; G, large tree-stump; H, remains of posts; I, dotted line showing ends of planks bared by the tenants.

side is a large tree stump of some soft wood resembling willow. The timbers of both causeway and floor have evidently been fitted to the boll of the tree, proving that it must have existed before either the causeway or floor was laid. The latter sloped at a considerable angle to the south-west, owing to the with-

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. p. 269.

drawal of the water from a small lake not far from the site of this ancient floor; the bog in former days was at least fourteen feet deep over it. In the memory of persons still living, this portion of Cargaghoge was entirely covered with water. About the centre of the floor was a collection of stone slabs, closely fitted together, with a substratum of blue clay, but all laid on planks of timber forming part of the floor. On this fireplace there was a quantity of ashes, and on the edge of the hearth a small corn-crusher of stone. Underneath the planks, as far as could be observed without disturbing them, a thick deposit of hazel and birch branches formed a foundation for the support of the flooring.

From the descriptions given in Irish mss., it would appear as if the very earliest wooden dwellings were either rectangular or of oblong form, but there is absolute proof of the co-existence of circular houses, made chiefly or wholly of wicker-work. Similar dwellings of the Gauls are figured on Roman bas-reliefs; the plan of this kind of house resembled a tent; the poles were driven into the ground in a circle, the spaces between filled in with wicker-work, and the interstices made weather-tight by daubing them with clay. In the centre of the interior, a stout post, commensurate with the required height of the conical roof point, was firmly erected, and to this the rafters were attached, descending at a steep incline to the upright wall poles. According as they radiated from the central post their distance from each other correspondingly increased; in these spaces cross-beams were inserted, and across the radial rafters narrow slips of wood were fastened, forming a complete covering from the conical point of the roof to the eaves; a sheeting of rods was laid over this at right angles, and the framework of the roof was then thatched with straw, rushes, or sedge bound down with scollops.*

Gangways.—Some crannogs were connected with the shore by a wooden gangway supported on piles driven into the bed of the lake. The artificial island in the lake of Efferan, county Clare, affords a good example of this kind of passage. It has been often stated that the characteristic feature of Irish lake dwellings was their insularity, their complete disconnection with the land; yet it would be tedious to enumerate the many instances in which remains of both pile gangways and stone causeways have been dis-

* *Manners and Customs of the Ancient Irish*, pp. 31-2.

covered ; although with regard to the latter it is quite possible that in some cases the so-called causeways may have been merely the stones that had been deposited around the base of the piles, to give solidity to the uprights supporting the footpath.* It has been suggested that these gangways, being under the water level, were meant to provide on sudden emergencies a means of secret access to the crannog, and that their oblique, sometimes even tortuous, course was for the purpose of preventing any but those accustomed to the submerged path from making use of it. Is it not more probable that the people who made it merely availed themselves either of a shoal or of the best foundation into which uprights might be driven ? Wooden roads and causeways across the deep, treacherous morasses and soft miry banks with which lake dwellings were environed have been frequently discovered. A roadway, evidently made for convenience of the crannog in Loughnahinch, county Tipperary, was covered with a great accumulation of peat.† Another submerged roadway, constructed somewhat like an American corduroy road, was discovered in a bog between Castleconnell and the Esker of Goig, in county Limerick.‡ In the north portion of the Wexford estuary was a causeway that in ancient times connected Beggerin to other islands ; there were two rows of oak piles on which, apparently, had formerly been transverse beams.§ In Duncan's flow bog, Ballyalbanagh, county Antrim, was a wooden roadway laid on the surface of the *black* turf, level with stumps of deal corksers ; this road was seven feet wide, formed of longitudinal oak beams sheeted with transverse planking of the same material. In the centre of the bog, where the foundation was soft (fig. 6), there were eight longitudinal beams, whilst in the firmer ground (fig. 7), near the edge of the bog, there were but three, one at each side and one in the centre. The roadway, with the exception of one log, was formed entirely of oak ; holes worn in the oak planking had been mended (fig. 8)



Fig. 6.

Section of roadway in soft ground.

* Mr. Mackinlay, describing a crannog in Loch Quien in Bute, states that two rows of piles extended obliquely from it to the shore of the lake, between which the ground was covered with flat stones, "*not raised like a causeway.*"

† *Dublin Quarterly Journal of Science*, vol. vi. p. 69.

‡ *Mem. Geol. Sur. Ireland.*

§ *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. (4th Series), p. 435.

with pieces of *deal* fixed in position across the aperture. "On the roadway there are now five feet of uncut turf, while ten feet of 'good turf' are said to have been cut away. Over the good turf there must have been 'white

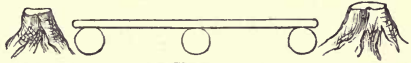


Fig. 7.

Section of roadway in firm ground.

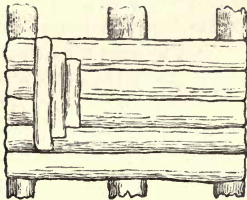


Fig. 8.

Plan of roadway, showing repairs.

turf' and clearing, which would add at least about five feet more to the thickness of peat over the cash," or roadway.* A paved causeway, covered to the depth of eight or nine feet with bog, leads down to what used to be the edge of the water, at Kilnock crannog, county Antrim.† On an ancient wooden causeway or road in Ballykillen Bog, barony of Coolistown,

King's County, a remarkable axe, formed of bone (fig. 9), was found seven feet below the then surface of the bog; the axe is eight inches long, and the sharp cutting edge at the small extremity had been formed by an oblique cut of the bone. With it was a flint arrow-head (fig. 10) in a briar-root shaft, the thong which tied it still adhering.‡

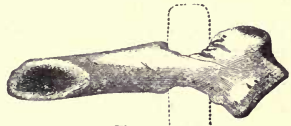


Fig. 9.

Axe-head of Bone.



Fig. 10.

Flint Arrow-head, Shaft and Thong still adhering.

Remains of cut reeds, ferns, heather, and sand or clay, are very frequently found strewn on the roads thus leading into crannogs.

Kitchen Middens and Refuse Heaps.—The most usual site of the kitchen midden, or collection of refuse thrown out of the dwelling, is at the entrance to the crannog, where was formerly the landing-stage or gangway leading to the shore; and what more natural than that pre-historic housekeepers should take the easiest method of

* *Geology of Ireland*, G. H. Kinahan, p. 276.

† *Proceedings R. I. A.* vol. vii. p. 154.

‡ *Cat. Mus. R. I. A.* p. 251.

getting rid of refuse by merely throwing it out of the door, a practice followed, on *terra firma*, by many of their descendants in Ireland at the present day. The accumulated mass of bones (invariably found in a broken state for extraction of the marrow) is in some instances immense; it is estimated that at Dunshaughlin, in Meath, about two hundred tons were sold for manure, three hundred tons were exhumed from the kitchen midden of one of the lake dwellings in Loughrea, county Galway, and fifty tons from that of Ardakillen, county Roscommon; the bones in the heaps have, evidently, in some instances, been gnawed by dogs after their owners had extracted the marrow, for which dainty the Irish appear to have had a peculiar relish, judging from their proverb, *Ma bhris tu an cnamh char dhuighail tu an smior*, i. e., though you have broken the bone, you have not sucked out the marrow: equivalent to saying, "you have done the most difficult part of the work, though you have not completed it." Refuse heaps may be said to form also a perfect mine of antiquities, for every "cast" article of household gear was thrown into them; hence, the objects though numerous are generally fractured. After bones the next most frequent "find" consists of fragments of fictile ware. It has been remarked that if the former site of a crannog becomes again exposed to the light of day, by the *gradual* cutting away of the peat under which it lay buried, perhaps during centuries, then many objects calculated to excite the interest of archæologists might be turned up from time to time without attracting particular notice, and thus no means would be left to form even an approximate estimate of the date of the crannog; but if careful examination be made of a kitchen midden, exposed to view by the simple drainage of water from the site, then the antiquities discovered afford tolerably correct and safe data from which to calculate the age of the structure.

Canoes.—Some crannogs appear to have been veritable islands, the only means of communication with the land being by canoes; of these, in Irish and Scottish waters alike, remains have been frequently found near the dwelling, in some instances alongside the landing-stage, as if sunk at their moorings.* A canoe formed by

* A writer states that around the Crannog of Lough Ravel were found "a whole fleet of boats," each cut out of a single trunk of oak; one was made fast to a stake of the crannog by a rude chain.

hollowing out the trunk of a tree seems to have been almost universally the first attempt at boat-building, and to effect this, a people even in the rudest state of existence would possess sufficient ingenuity. Canoes are so universally found associated with crannogs, that their discovery in lakes and bogs in Ireland has been considered an indication of the existence of lacustrine dwellings in the immediate vicinity; but it may be safely concluded that, unless implements or articles of stone or bronze are found with "dug-outs," they do not of themselves carry us back to pre-historic times, nor do they necessarily indicate the great antiquity commonly attributed to them. Canoes have been found of the oldest type known, and yet containing articles of iron of very modern form; therefore, it may be surmised that a people of primitive habits like the lake dwellers clung tenaciously to old customs, and their models remained unchanged during many ages. Irish single-piece canoes may be roughly divided into three classes or varieties—(1) the first, generally either sharp or rounded at both extremities, averages twenty feet in length, and about two in breadth, some however have been discovered square at both ends. Again, some are flat-bottomed and others round: the inside depth varies according to their state of preservation; (2) the second kind is generally of much greater length; one found, measuring forty feet, was round in the bow, but square in the stern, which was formed of a separate piece, let into a groove within a few inches of the extremity: this make is altogether more heavy and clumsy than the preceding; (3) the third variety is trough-shaped, and has been appropriately designated "the portable canoe"; the length is from eight to twelve feet; it is square at both ends, round in the bottom, and having projecting handles at either extremity, apparently for the convenience of carrying it from lake to lake. All alike seem to have been hollowed out of a single tree, probably in the fashion described by Captain Speke, in his *Travels in Central Africa*, wherein he says the negroes fell a large tree, lop off the branches, shape the timber, then cover its upper surface with wet mud, as it lies on the ground, and set fire to it, burning out the core, and finishing off with roughly-constructed hatchets the part unconsumed by fire.* In Lough Owel, county Westmeath, in the

* *Journal of a Cruise on the Tanganyika Lake, Central Africa.*

immediate neighbourhood of a crannog, a very large canoe was found in company with two of smaller size. The prow was in shape like a curved beak; it might be expected that the principle of the curve would have been carried out in its after end, but, whilst the entry is spoon-shaped, the stern is square, and a hollow but shallow groove cut at the very end was formerly filled by the stern board. This canoe was round in the bottom; twenty-four holes were drilled through the sides, and the same number through the floor. A canoe twenty feet nine inches long, four feet seven inches broad, and one foot eight inches deep, was found at Derry-hollagh, county Antrim; another in the lake of Moynalty was twenty-four feet in length.* One unearthed at Ardakillen measured forty feet in length, by four feet across the bow,† whilst another in Drumaleague Lough, county Leitrim, was only eighteen feet long by twenty-two inches broad—not formed for speed, certainly—being square at stem and stern. A canoe at Cahore, in Wexford, was twenty-two feet in length, two-and-a-half feet across amidships, and eleven inches in depth (plate iv. fig. 1). At a place called Cornagall, about six miles from Cavan, was found one more than half consumed by the conflagration which had destroyed the crannog itself; in the bottom of this boat lay a complete set of tools, belonging to an ancient craftsman who had lived at a period subsequent to the adoption of iron tools.

In consequence of the low level of the Boyne in the summer of 1837, workmen engaged in taking gravel from the river, near the obelisk erected to commemorate the period

“When James and William staked a Crown,
And cannons they did rattle,”

discovered a well-preserved “single tree” canoe, which was for many years after exhibited as a curiosity in Liverpool, but finally presented to the Royal Irish Academy. The length of this canoe is eighteen feet nine inches, it averages two feet ten inches in width, is twenty inches high in the side, and has three circular and artificial apertures in the bottom, as shown in the illustration‡ (plate iv. fig. 2.) Three canoes were found at Toome Bar; the one

* *Arch. Journal*, vol. iii. p. 46.

† *Ulster Journal of Archaeology*, vol. vii. p. 194.

‡ *Proceedings R. I. A.*, vol. ii. p. 247; vol. viii. p. 293.

Fig. 1.



Single-piece Canoe from Cahore, Co. Wexford.

Fig. 2.



Single-piece Canoe from the Boyne.

Fig. 3.



Single-piece Canoe from Toome Bar.

Fig. 4.



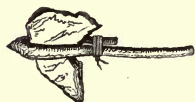
Supposed Single-piece portable Canoe from near Enniskillen.

Fig. 5.



Paddle from Toome Bar.

Fig. 6.



Stone Anchor.

Fig. 7.



Iron Anchor or Grappling from
Toome Bar.

Single-piece Canoes, Paddle, and Anchors.

figured (plate iv. fig. 3), is hollowed out of a single piece of oak, the length, fifteen feet, with projecting beaks at prow and stern; it is twenty inches wide, fourteen inches deep, and is flat-bottomed; it lay "from six to eight feet below the surface, in a bed of sand and Lough Neagh clay."

The discovery of an ancient canoe beneath the waters of Lough Erne was made in a somewhat romantic manner. A steamer plying upon that lake attempted, in consequence of the unusual height of the water, to make a short cut, but grounded on a bank, and in so doing pushed upwards her ancient sister into the light of day. The "dug-out" thus found is of oak, eight feet in length, by one foot five and a-half inches in breadth, its internal depth is seven and a-half inches, the sides averaging about an inch and a-half in thickness. In shape it differs from any other canoe in the Museum, Royal Irish Academy, and, taken as a whole, conveys the idea of the elongated bowl of a table spoon; it also presents a peculiar characteristic, in that a number of holes at almost regular intervals, in sets of three, have been pierced through its floor; there are three sets of these holes, each about an inch in diameter; they cross the boat in threes, at right angles with a line drawn through the middle from end to end.

During the operation of changing a line of road about a mile and a-half from Enniskillen, the antique figured (plate iv. fig. 4), was exposed to view. Its position was almost equidistant from Lough Erne and Lough Rossole. Owing to the smallness of its proportions as regards beam, objections have been raised to its claim to be classed as a canoe, and it has been suggested that it was perhaps a brewing vat for manufacture of some kind of drink. Impossible to say what the original length of this square and hollowed block of oak may have been, but the remaining portion measures about fifteen feet: the sides and bottom are thin, the depth is one foot, the breadth at its remaining end only one foot three inches; that end, however, is seven inches thick, and from it, on the exterior, two handles cut out of the solid block project, as shown in the drawing.* The great difference between the thickness of the sides and end

* It may be observed that a canoe found at Cudrelin, on the Lake of Neufchatel, had a similar kind of handle.—*Lake Dwellings of Switzerland*, Keller, 2nd ed., p. 282.

may be accounted for by the presence of the handles, as they would need to be attached to solid timber if required for use as lifting agents; the diameter of these handles is about three inches, the length six inches, and at the end, between the handles, there is a hole by which this antique could be drained. If it be really a canoe, the handles would prove most serviceable for the purpose of transportation from one lake to another, and for the chase of wild fowl on lake or river, would meet the requirements of the primitive sportsman. A groove cut upon the interior of what may be termed the remaining portion of the gunwale, seems as if intended for reception of a covering in the style of an Esquimaux canoe, and, owing to the extreme narrowness of the supposed craft, this arrangement would be absolutely necessary for the safety of the occupant.* A portable single-piece oaken canoe or trough of similar description, twelve feet in length, by three in breadth, and furnished with handles, was found in the bog of Ardagh, parish of Maghe-Ross, and is figured in Shirley's *Dominion of Farney*.

The foregoing furnish specimens of the three classes into which canoes may be divided; in all, about fifty have been found in Ireland.† Owing to the preservative properties of peaty matter, the wood of some of these canoes was in a fairly sound state when dug up: one of the largest and most perfect found in connexion with the Strokestown crannogs, was cut up by a "grim utilitarian" for roofing material, and the best canoe belonging to the Ballinderry crannog was split into firewood.

Paddles.—For the purpose of propelling a canoe paddles were essential, and of these numbers have been discovered: there are several in the Museum of the Royal Historical and Archæological Association at Kilkenny, as also in the Museum of the Royal Irish

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. (4th Series), pp. 16–18.—W. F. Wakeman.

† The following list of single-tree canoes, though necessarily incomplete, yet enables an approximate estimate to be made of the number already discovered:—Ardagh, 1; Ardakillen, 1; Ballinderry, 2; Boyne, 1; Cahore, 1; Cloonfinlough, 1; Cornagall, 1; Derryhollagh (*several*), 1; Drumaleague, 1; Drumdarragh, 1; Drumgay, 1; Drumkeery, 1; Erne, 2; Lough Eyes, 3; Kilnock, 1; Lough Annagh, 5; Lough Faughan, 1; Lough Owel, 1; Loughhrea, 4; Lough Rinn, 2; Loughtamand, 1; Miracles (*several*), 1; Moinalty, 1; Moinenoe, 1; Mourne, 2; Randalstown (*several*), 1; Sligo (*Ballydoogan*), 1; Toome, 3.

Academy, Dublin. The paddle, two feet seven inches long, by five and a-half inches across the blade, as represented (in plate iv. fig. 5), was found in the immediate neighbourhood of a crannog site at Toome Bar, on the Lower Bann. It is the largest of two from the same locality; both are imperfect, the handle of each being fractured in the same spot, so that the original length cannot be ascertained; but as they were not more than half an inch thick, they could only have been employed in propelling a very light craft, perhaps a portable canoe.*

Anchors.—For the purpose of holding a canoe stationary an anchor is requisite, but of these not more than three have as yet been discovered. The one figured (plate iv. fig. 6) is of stone. The shank must have been of wood, lashed to the stone. There was with the canoe discovered in the Boyne what bore the appearance of a kind of wooden anchor. At Toome Bar was found an anchor or grappling instrument twenty-one inches long, but being formed of iron it should be viewed as comparatively modern (plate iv. fig. 7).

Curach.—There is yet another kind of boat, the curach, that must have been employed by these lake dwellers; of it, however, on account of the perishable materials of which it was composed, no remains have as yet been exhumed. We may all recollect, when reading English history in our childhood, the description given of the primitive Celtic boat, constructed of basket-work and covered with skins, in which the Picts and Scots are said to have invaded Britain in crowds, and of which the Britons themselves made use: this is frequently referred to by old classical writers. Herodotus mentions boats of this kind as existent in his time on the Tigris and Euphrates; similar skiffs are used on those rivers at the present day; boats of analogous construction are employed in some parts of India; they are propelled by paddles where the water is deep, and poled over the shallows. Nothing can be more simple than the construction of these skiffs; only two materials are requisite, and they the most accessible in the country, *i. e.* bamboo and hides. When Cæsar had constructed boats in Spain, after the manner learnt by him in Britain, it is said that “the keels and ribs were

* The above illustration represents No. 3 in the Museum, R. I. A. No. 4 in the same collection is two feet two inches long, by five inches across the blade.

made of light timber, the rest of the hull being woven together with basket-work, and covered with hides.” *

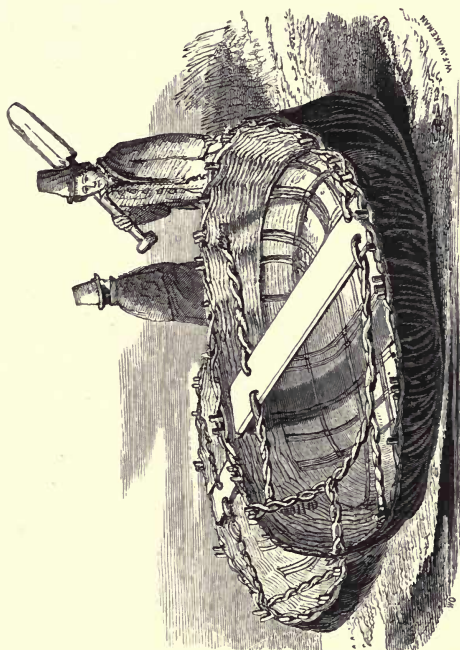
“ The bending willow into barks they twine,
Then line the work with spoils of slaughtered kine.

On such to neighbouring Gaul, allured by gain,
The bolder Britons cross the swelling main.”

Pliny says :—“ Even now, in the British channel, they (the boats) are made of osiers, covered with hides sewn together.” Solinus, describing the rough sea between Britain and Ireland, says that the natives “ sail in ships made of osiers, which they surround with a covering of hides.” Adamnan, in his life of St. Columba, refers to a voyage made in a curach by St. Cormac. The curach is said to be still in use on the Severn,† and on some parts of the coast of Ireland, in shape and build similar to those of thousands of years ago ; at the same time it may be affirmed that few persons of the present generation could declare they have seen the *true* curach, that term having been now transferred to boats covered with coarse tarred canvas, and which differ widely both in form and method of construction from their ancient prototype. The curach seen by W. F. Wakeman in use on the river Boyne so late as the year 1848 is thus described by him :—A regular frame of willow ribs, generally laid in pairs, and extending along the sides and floor, formed the skeleton of the future boat, which was in the form of the bowl of a spoon, a little broader towards one end than the other ; about eight feet in length, but very nearly circular. The extremities of the ribs for a depth of about eighteen inches from what would now be called the gunwale, were set in a very thick, strong, and closely-woven band of wicker-work, above which the ends of the rods slightly projected. Midships was a thwart of ash or oak pierced with four holes, two near either end, through which were rove thongs, composed of twisted osiers connecting the seat, or thwart, with various portions of the above mentioned band, so as to bind the work together. The frame was then covered over on the outside with skin, untanned, of the horse or cow ; and the result was the

* *De. Bel. Civil.* 1-54.

† The coracles used still in Caermarthenshire are of oval form, five feet and a-half long, by four feet and a-half broad ; the hides forming the skin of the skiff are pitched.



Curach, as used on the Royn, 1848.

completion of a boat well adapted for the requirements of fishermen.* The raw hide of a newly slain animal, properly extended presented a ready means of constructing a boat, and became to the early inhabitants of the British Islands what the birch-tree bark is to the American Indian. In the sculptures from Nineveh a similar use of the hide is observed, as a means of crossing rivers, but the application is less ingenious, being merely a skin inflated with air like what is called on some parts of the Irish coast a "stookey," and with which, not unfrequently, fishermen, so late as the year 1860, floated their nets and lines; the skin of a dog or any other animal served the purpose.†

Ingenuity of Lake Dwellers, Clothing, &c.—It has been remarked that the brains of most savages and the skulls of most primitive races are larger than, in theory, they ought to be; often rather larger than the brains and skulls of the average masses of the great cities of the present day; but this need not cause surprise, if the life of intelligent interest passed by the savage child be taken into consideration. From the tenderest age he was observant of all the devices practised by his parents for procuring clothing, food, means of defence, in short, all the essentials of existence; the natural result of his wild life was health and strength; indeed, on the principle of the survival of the fittest, it could only be the robust who lived through the hardships and climatic exposure incidental to a savage life. The lake dweller was no exception to this rule, for his ingenuity would be most fully exercised in endeavouring to procure the means of sustenance for his family. It is easy to imagine the various daily occupations needful in his struggles for existence. Timber from the forest supplied him with materials both for his dwelling and for fuel; the skins of wild animals furnished him with clothing, he shaped them with a sharp flint flake, and sewed them with thongs, using as needle the pierced bone of some bird or small mammal. In early Irish history mention occurs of skin or leather garments: when *Muircheartach MacNeill* made his celebrated circuit of Ireland, A.D. 942, it is stated that his soldiers were clad in long leather cloaks.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. (4th Series), pp. 74-5.

† *Ulster Journal of Archaeology*, vol. i. p. 32.

We are not left to mere conjecture regarding the manner in which the men of these primitive times protected themselves from the inclemency of the weather. In the year 1821 the body of a man, about six feet in height, with dark, reddish-coloured hair, short beard, and teeth in a good state of preservation, was found ten feet below the surface of a bog, on the lands of Gallagher, near Castle Blakeney, county Galway. The head, legs, and feet were bare, but the body was covered with a deer-skin tunic reaching to the knees and half-way down the arms; in front it was laced and fastened by thongs of the same material. The mantle was, unfortunately, much injured in the disinterment, but a few fragments of it still hung together; portions of the seams sewed with fine gut of three strands still remained; "the regularity and closeness of the stitches are most remarkable, as shown by the accompanying cut, in which a portion of one of the joinings is represented double the natural size. This closure was effected by what is termed the looped stitch, similar to that used in working a button-hole, so that by having each stitch knotted the chance of ripping was lessened."* The age of the Irish mummy (if we may apply that term to the body here described) is considered by some to date back at least 2000 years.



Fig. 11.
Fragment of Deerskin Garment.

A bed of growing peat is endowed with marvellous powers. It seems to act like the ancient Egyptian process of embalming on the bodies of men or animals that have become accidentally entombed in it, preserving them for centuries after their contemporaries have, by the ordinary laws of nature, totally disappeared, and organic substances, such as butter, seem also to feel its influence. Peat may bear comparison with ice, the well-known preservative properties of which were strikingly illustrated by the discovery on the shores of Lake Oncoul, in Siberia, of a carcass of the *Elephas primigenius*, or mammoth (supposed to have become extinct in the Pleistocene period) in a perfect state, and so well refrigerated that, when thawed, the dogs of the neighbourhood devoured its flesh. Again, in 1846, the summer in Siberia had been unusually hot; the frozen

* *Cat. Mus. R. I. A.* pp. 276-7.

marshes which extend along each side of the river Indigirka were thawed, and a perfectly preserved carcass of a mammoth floated down the stream. This monster had most probably met his death centuries before by sinking into the deep snow of the morasses, was frozen over, and thus remained until the exceptional summer heat melted his icy prison.

Stone, Bronze, and Iron Ages.—We know that the learned have divided the period man has inhabited the globe into what may roughly be called three Ages—the Stone, the Bronze, and the Iron. Ancient mythology presented us with another, ycleped the Golden, when our planet was supposed to be a paradise, and man lived in a state of perpetual happiness; it is to be feared that the idea of a golden age, either past or to come, is purely mythical. Future archæologists may, perhaps, be tempted to apply the designation “Steel” to the present or now commencing epoch, in order to distinguish it from the mere “Iron Age.” Improved methods of manufacture are now-a-days causing steel in some degree to supersede its parent metal, iron, even as iron superseded bronze. Excavations on the site of crannogs have demonstrated clearly the fact that some of them have had a continuous existence throughout the three ages of Stone, Bronze, and Iron. Classification of the earth’s history into those three ages does not, however, imply a defined and distinctive period when stone, bronze, or iron alone was in exclusive use, though there may possibly have been a time in which only stone and bone were available. When the empires of the Tigris and Nile were in their prime, the northern littoral of Europe was inhabited by a race using implements of bone and stone, but these regions were in the Bronze Age* at the period when the Phœnicians had attained the zenith of their power. According to some writers, the inhabitants of the Baltic littoral had not till early in the Christian era discarded bronze and stone for iron. Although weapons of bone or flint were certainly of an earlier age than bronze and iron, yet it is more than probable that flint, bronze, and iron may have been in use at one and the same period, and even in the same locality, down to a period long subsequent to the Christian era. To this day the Esquimaux use bone implements, but they also employ iron, so that in remote countries a stone age might be said still to exist, the few iron implements in possession of the wild tribes

* *Æs erat in pretio, chalybeia massa latebat.*

being acquired by recent contact with western civilization. In Ireland there is no fixed line of demarcation between the stone, the bronze, and the iron age; there was an overlapping and co-mingling as the better and more useful metal gradually superseded its predecessor. Thus a stone instrument, by itself, would be a most deceptive guide in determining the state of civilization of the inhabitants of the site on which it was discovered, because stone implements are also found associated with articles both of bronze and iron. "Like the three principal colours of the rainbow," writes Mr. Evans, "these three stages of civilization overlap, intermingle, and shade off, the one into the other; and yet their succession, as far as Western Europe is concerned, appears to be equally well defined with that of the prismatic colours, though the proportions of the spectrum may vary in different countries." Petrie, the well-known Irish antiquary, was the first to claim for a large class of iron remains the position of an interesting connecting link, which they are now allowed to hold, between the bronze manufacture of a remote age and the industrial achievements of comparatively modern days. At the period of the first discovery of the remains of Irish lake dwellings, archaeologists looked upon objects of iron found in lakes, or in their immediate vicinity, with very little interest, for it was considered that they could not have held out against the corroding influence of water for a lengthened period; therefore iron was supposed to stamp lacustrine habitations with a mediæval or even modern impress. The belief was then very general that the inhabitants of Erin of the prehistoric period, having existed generation after generation as manufacturers of flint and stone weapons, had gradually, through some unknown channel, become acquainted with gold, silver, and bronze, and that this latter metal, down even to the advent of St. Patrick, was used almost exclusively in the manufacture of weapons of war, small ornaments for personal adornment, and objects of domestic use. Articles of stone, bone, wood, bronze, and iron have been discovered in strange medley: swords, spear and javelin heads, axes, daggers, knives, hones, querns, shears, tweezers, chains, combs, pins, brooches, beads, horse trappings, cauldrons of hammered bronze, lumps of iron slag, &c.—in short, every conceivable object, from the rudest flint implement to highly-finished silver ornaments.

The accidental discovery of the great historical crannog of Laggore, in the county Meath, already referred to, presents the first,

and probably the most important, treasure-trove of earliest iron implements. In A.D. 848 an Irish chief, with his Danish allies, plundered this island fortress and burnt it; whilst in 933, nearly a century later, the place again suffered a similar fate at the hands of another marauder. Nothing more was heard of it till the date of its disinterment, about the year 1840. The latest period, therefore, to which the majority of the antiquities so plentifully found within and around this stronghold may be referred, is somewhere between the eleventh and earliest half of the tenth century. This approximate date is about the historic limit in which the so-called "Iron Age" may be allowed to have reached back in Ireland. How long it had previously existed there must be matter of conjecture; but it is almost incredible that its natives should have been far behind their neighbours in the art of metallurgy; and we know that Cæsar* found the Britons acquainted with the use of iron. It can only be surmised that, at some very remote period, bronze as the prevailing material gave way to iron, but the period of transition may probably be counted by centuries.†

Weapons and Tools.—In nearly all Irish crannogs, more especially in the larger sites, weapons of war and of the chase have been discovered in abundance, consisting chiefly of arrow- and spear-heads, swords, daggers or skeans, knives, and axe-heads. The numerous fragments of artificially fashioned bone found in and around crannogs plainly demonstrate how much that material was utilized by their inhabitants; many tips of the antlers of deer contained in the collection of the Royal Irish Academy and in that of the Royal Historical and Archæological Association, have evidently been sawn from the original branches, and employed in forming handles for swords, knives and daggers; some are ornamented, whilst others are pierced with a hole at one extremity, having evidently been fabricated for a distinct purpose, for spear- or javelin-heads, &c.; these were attached to handles or shafts, by means of the sinews of animals, or thongs of skin. Amongst primitive races the transition from tool to weapon is slight; the same article must, in many cases, have served the double purpose.

* Utuntur aut aere, aut taleis ferreis, ad certum pondus examinatis, pro nummo. Nascitur ibi plumbum album in mediterraneis regionibus, in maritimis ferrum; sed eius exigua est copia; aere utuntur importato.—Cæsar, *De Bel. Gal.* Lib 5. cap. xii.

† *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. (4th Series), pp. 461-465. —W. F. Wakeman.

Arrow- or spear-heads have been found of bone, horn, flint, bronze, and iron; they are usually of small size. Figs. 12 and 13,



Fig. 12.



Fig. 13.

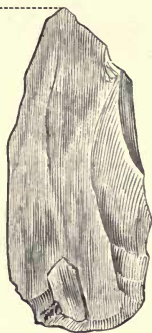


Fig. 14.

Flint flakes from the Crannog of Lough Ravel. Half-size.

Flake of Basalt from Toombridge. Full-size.

from Lough Ravel, county Antrim, represent (half-size) flakes fashioned into arrow- or spear-heads. Fig. 14 is a flake of basalt (full-size) from Toombridge, in the same county. Fig. 15 is a flint implement from the recently discovered crannog of Lisnacrogghera.*

Plate VI., No. 1 is a flint implement, probably a knife. No. 2—A well-worked flint, most likely used for the same purpose. No. 3—A flint "scraper," that appears to be somewhat injured at one end. No. 4 represents what antiquaries style a "core" of flint. It is in fact the remains of a block, from which flakes have been struck for the purpose of forming them into arrow-heads, knives, &c., &c. No. 5 is a specimen of the hammer-stone so frequently discovered in the refuse heaps of Irish crannogs. They are usually abraded at the extremities, as if from long use, and similar articles occur in the shell mounds

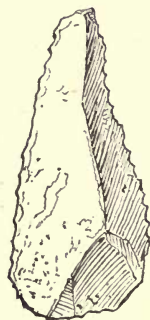
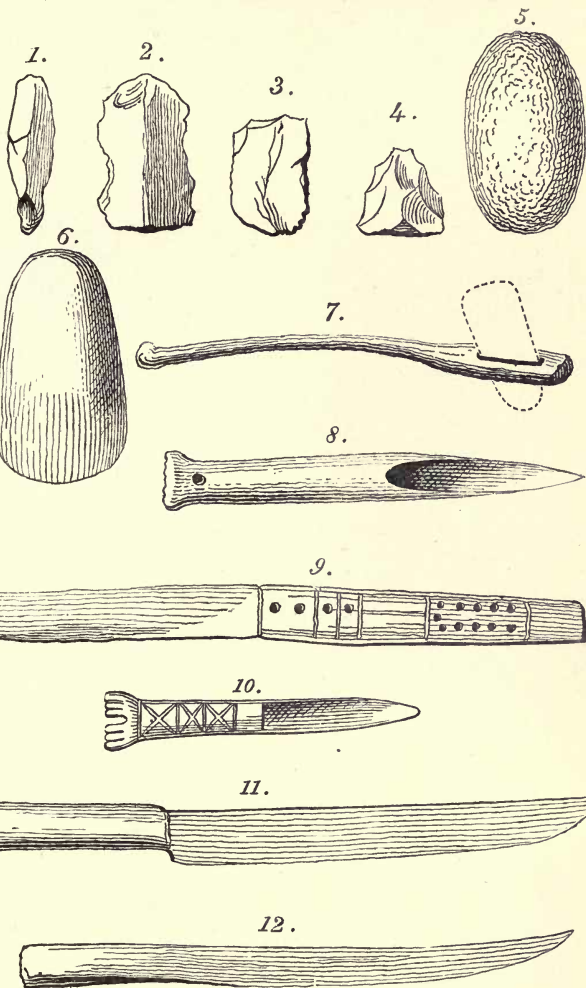


Fig. 15.

Worked Flint from Lisnacrogghera. Full-size.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. v. (4th Series), p. 119, vol. vi. p. 392.



*All these objects are given half
the real sizes, except No 7, which is
one eighth*
W.F. Wakeman.

of our coasts, having probably been used for breaking crustaceæ. No. 6 is an ordinary stone hatchet. No. 7 represents a wooden object which has all the appearance of having been used as the handle of a stone-hatchet. It is here given $\frac{1}{2}$ of the real size. The aperture, supposed to have been made for the reception of a stone celt, measures in length, $3\frac{3}{4}$ in., but the shrinking of the wood in drying renders it impossible to say what its original breadth may have been. The dotted line is introduced to show how the cutting instrument was most probably placed. No. 8 may have been either a dagger or a spear-head; it is of bone; a rivet-hole indicates that a handle was at one time attached. No. 9—A knife of bone, the handle and blade in one piece. It measures 8 in. in length, and the haft portion, as shown in the illustration, is ornamented with a series of squares enclosing a rude pattern composed of dots. No. 10 is a very curious little article formed of bone, and not untastefully decorated in the same style as the socket portion of the iron spear-head, as shown in plate ix., fig. 6. It was evidently a scoop, and would be serviceable in the extraction of marrow from bones of deer, or other animals used as food by the lake dwellers. Nos. 11 and 12 are rude unornamented knives, in a single piece each. It is not easy to guess what articles of this kind could have been employed to cut, but so early as the times of stone chambers, knives of bone were in requisition.*

Fig. 16, from Lough Eyes, represents the horn of a red-deer converted into a weapon; its weight is considerable, and there can be little doubt that it had served as a rude battle-axe; its broader end had been fined to a cutting edge, and a notch shows where a leathern thong or sinew was lashed for attachment of the axe-head to the handle into which it had been set in the manner of a stone or flint celt. This antler, together with the bone axe-head from



Fig. 16.
Axe-head of red-deer's
Horn from Lough
Eyes. Quarter-size.

* Plate vi.—Nos. 1 and 9 are from Ballinderry; 2, 3, and 4 from Drumdarragh; 6 from Drumsloe; 7 from Kilnamaddo; 8 and 10 from Lagore; 11 and 12 from Ardakillen.

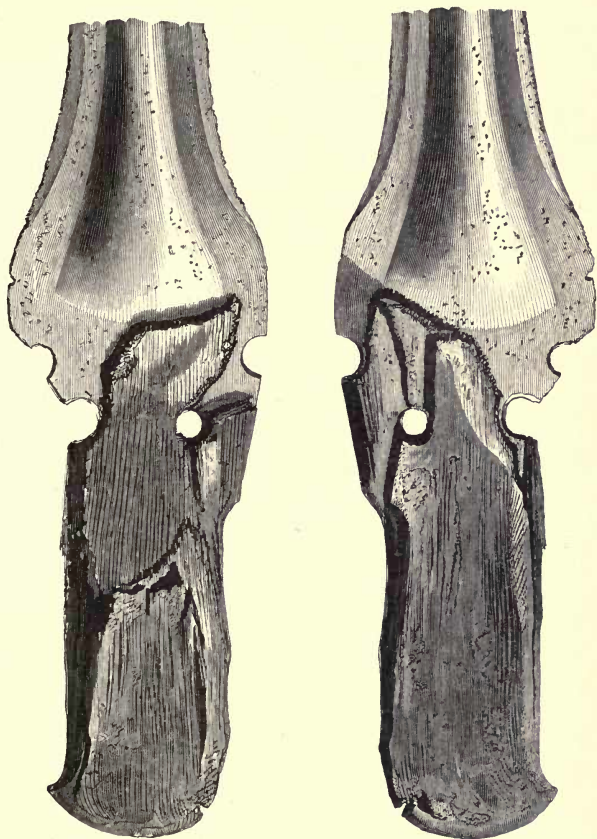
Ballykillen, are the only specimens of that special class of weapon; but both spear-heads and daggers formed of bone have been found at Ardakillen, Ballinderry, and other crannogs. In the Swiss "Pfahlbauten" it was only the handle of the axe that was composed of horn, the cutting portion being flint or stone, inserted into the shaft at its thicker end.*

Swords, whether of bronze or iron, are almost invariably of small size, and double edged. There is usually a central rib to the blade, but in some instances fluting occurs. The ordinary crannog sword may be described generally as of two kinds, the one increasing in breadth from the handle to the end, which terminates in the form of a triangle; the other is shorter, with a broad straight-edged blade obtusely pointed. Their handles were composed of bone or horn, and sometimes wood was used. There was no hilt or guard, properly speaking, though the handle usually somewhat overlaps the edges of the blade, while it recedes in a curve tending in a direction opposite to that of the pommel.

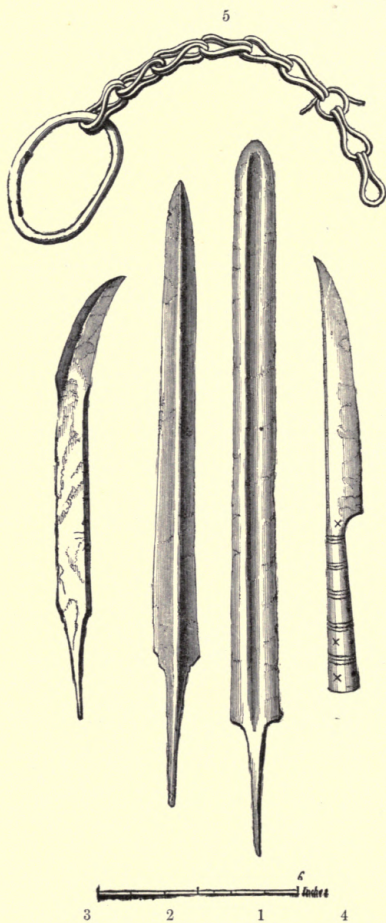
In April, 1864, a sword-blade of bronze, with the haft still attached, was found adjoining a lake containing a small artificial island, in the townland of Galbally, county Tyrone. The extreme length of blade, 25 in.; breadth at tang, $1\frac{3}{4}$ in.; weight, $13\frac{3}{4}$ ounces. The handle (both sides of which are represented in the accompanying plate) is of bone, probably cetacean; its length, $3\frac{1}{2}$ inches; weight 1 ounce; thickness, $\frac{5}{8}$ of an inch. The smallness of the handle is very remarkable, taking into consideration the popular idea of the great stature and strength of Erin's ancient inhabitants.† A well-preserved iron sword, with bronze mountings to the handle, was found in the crannog of Lisnacroghera. The blade tapers gradually to a point from about midway down its length, with a central ridge. The bronze mountings of the sword-handle are four in number. "Of these, one is at the pommel, another hoods as it were the butt of the blade, two others are intermediate, and very probably do not now occupy their original position, one of them certainly being movable. It is, therefore, impossible to judge of the space which had been left for reception of the swordsman's hand. It may be observed that the edges of all these fittings had been serrated or milled, but no

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. (4th Series), p. 558.

† *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. (4th Series), p. 197.



Hafted Bronze Rapier Sword, showing both sides. Full size.



Iron Weapons and Manacle from Lagore.

other attempt at decoration appears upon them. The blade measures in length $14\frac{3}{4}$ in., the handle 5 in."*

Plate VIII. presents good examples of iron swords, two of them double-edged: (1) the one measures $22\frac{1}{4}$ in., including the strig or tang that passed through the hilt; the blade is $18\frac{1}{2}$ in. long and $1\frac{3}{8}$ in. wide, with a broad shallow groove or channel along its entire length; the other double-edged sword (2) measures $15\frac{1}{4}$ in., and the blade is formed with a central ridge. No. 3 somewhat resembles an oriental weapon, the blade being curved towards the point; the length is $13\frac{1}{4}$ in., width 1 in., and the curved portion alone has a cutting edge. No. 4 is a peculiar, single-edged weapon of diminutive size; the blade measures 8 in., and the entire length is only 13 in., including the cross ornamented socket into which the haft was fixed.

With these articles an iron ring was found (5) having a portion of chain still attached; it is seemingly part of a manacle. In ancient Irish writings mention is made of "golden" fetters, and no doubt the "golden" swords,† also noticed in old poems as having been used by the Dalcassians, were so described on account of the

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), p. 374.—W. F. Wakeman.

† Quite recently a bronze axe-head, now in the writer's possession, was supposed by its peasant discoverer to be "*rata goold*"—and it was not till after repeated failures to effect sale of his "find" as gold that he could be convinced of the real nature of the metal.



Fig 17.

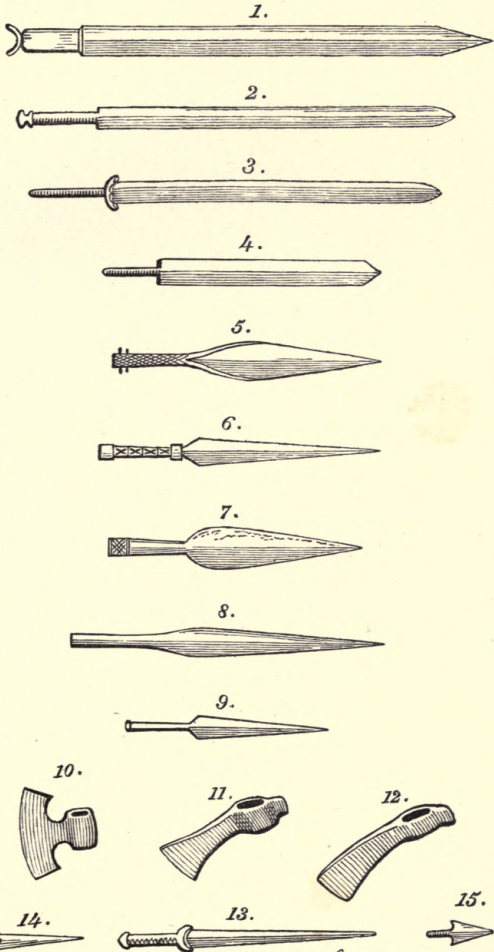
Iron Sword from Lisnacrogghera,
about $\frac{2}{3}$ real size.

yellow colour of the bronze of which they were composed; a fine example of neck fetters may be seen in the Royal Irish Academy, with a chain of considerable length and strength attached.*

No. 1, plate ix., is an iron sword, with bronze mounting at handle, measuring $25\frac{3}{4}$ in. in length; the breadth of blade is $1\frac{1}{2}$ in.; and the handle $3\frac{1}{2}$ in. long. This was considered by Petrie to be the finest specimen of its class then found. No. 2 may be also considered a very characteristic specimen of the ordinary crannog sword; its length is 23 in. including the handle, which measures 4 in. No. 3 exhibits a beautifully executed bronze fitting which separated the handle from the blade; the ornamentation of the bronze is a fine specimen of the "trumpet pattern." The total length is $21\frac{1}{2}$ in. No. 4 is characteristic of the shorter crannog sword or dagger; total length $14\frac{1}{4}$ in.

Few darts or spear-heads have been found of bronze, but the iron examples are very numerous, often of beautiful form and highly ornamented; they vary in length from about 6 to 18 inches. No. 5 represents a spear-head of iron in a wonderful state of preservation, and retaining two rivets, by which it was attached to the handle. The socket is ornamented with an elegant pattern in lines obliquely crossing each other, but the work is too fine to admit of being properly shown on the scale here given; length $13\frac{1}{8}$ in. No. 6. A spear-head, its socket strengthened by two bronze ferrules, is very curiously ornamented with a number of small crosses, separated from each other by fillets; there are apertures for four rivets which do not now remain; possibly they were of wood; length $14\frac{1}{2}$ in. No. 7. A spear-head, interesting on account of the ornamentation on its socket, as also from its general *contour*, which resembles that of some of the finest known bronze examples; length $13\frac{1}{8}$ in. No. 8. An extremely slender spear-head from Ballinderry, where it was found with a good many others; length 16 in. No. 9. A spear- or javelin-head; the form is very slender: entire length 9 in. No. 10 is a well-preserved and interesting axe-head of iron, its cutting edge well steeled. It measures $4\frac{1}{2}$ in. at the edge, and $3\frac{3}{4}$ in. from edge to back. Axe-heads of this peculiar form are to be seen in Scotland, sculptured on early monumental stones, probably of the Pictish age. No. 11 is an axe-head of the form most

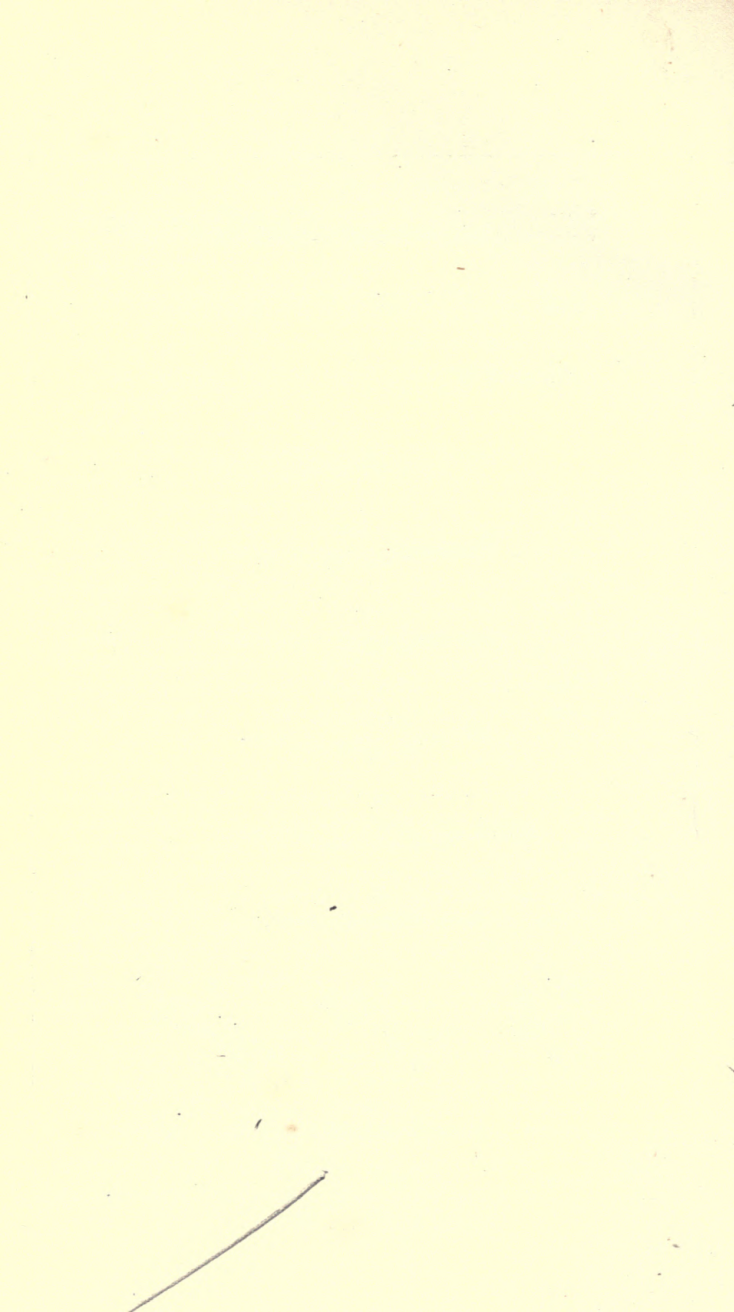
* See Ardakillen Crannog.

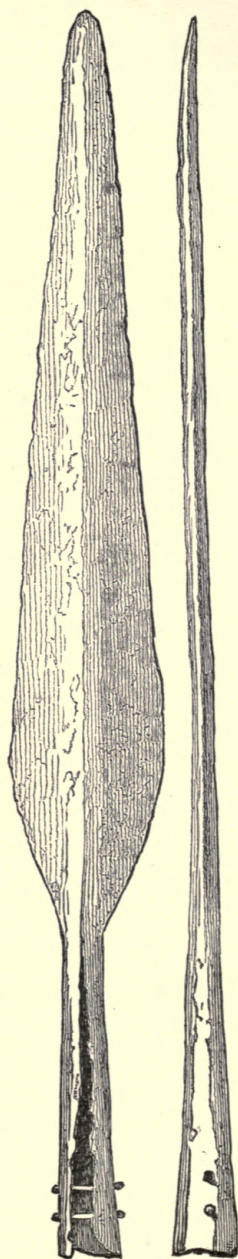


W. J. Wakeman.

Scale 1.8th

Weapons of Iron from Crannnogs.





Iron Spear-head, from Lisnacroghera, side and edge view. Half size.

commonly found in Irish crannogs; it measures 7 in. in length. No. 12 was found with the last described; it measures $7\frac{1}{2}$ in. This form of axe-head, although of rather rare occurrence in Ireland, is common on the Continent. No. 13 is an iron dagger, no doubt in use contemporaneously with the swords just noticed. The handle is of bone or horn, and it is valuable as an illustration of the style of hafting early iron weapons of the sword and dagger class. No. 14 is a point formed of iron, and containing a socket. It was most likely an arrow-head. No. 15 is a very beautifully formed arrow-head from Lough Gur; length $3\frac{1}{4}$ in. From the size of the socket the shaft must have been extremely slender.* Arrow-heads of this kind are rare in Irish crannogs.

The two spear-heads from Lagore, (fig. 18), are in fine preservation and very sharp; their length 10 in. In the crannog of Lisnacroghera, a magnificent spear-head of iron was discovered, of which a front and side view (half-size) is given, plate x. Spear-heads of this class have been commonly met with in the larger lacustrine sites, but this specimen is invested with a peculiar interest, from its being found in company with a number of bronze objects, whose use up to the present was unknown to antiquarians. It is now certain they were the butt-ends of spear-shafts—indeed two were discovered with the ends of their shafts still remaining in them. The mode in which one—and probably others also—had been attached to the handle is thus described by Canon Greenwell:—"The end of the shaft is split, and into the split is inserted a wedge of iron, so that when driven home, the wedge expanded the end of the shaft, and kept it firm in the butt." In Anderson's *Scotland in Pre-historic Times* one is described as having been found in Orkney. Like its Lisnacroghera fellows, it differs from the generality of Irish remains of its class, in the pos-

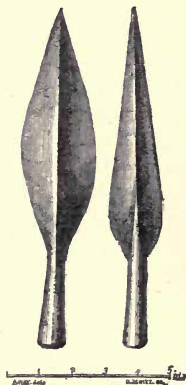


Fig. 18.
Iron Spear-heads from
Lagore.

* Plate ix., Nos. 1, 2, 4, 6, 7, 9, 11, 12, 14 are from Lagore; Nos. 3, 8, 10 from Ballinderry; No. 15 from Lough Gur.

session of a rich moulding bisecting the neck, but in all other particulars the style is identical. All the specimens of this class here figured were obtained by Canon Grainger from the crannog of Lisnacroghera. To one bronze butt was attached the whole of the shaft, 8 feet in length, furnished at top with a beautifully designed loop of bronze (see plate xi), and upon it was displayed a perfect Greek fret, with provision for the reception of enamel. From the same locality was procured also the highly interesting fragment which forms the central object of plate xi. It is portion of a spear-shaft retaining its bronze ferrule, and the rivet, also of bronze, by which the head was secured; this band or ferrule, being exceptionally beautiful, has been drawn as if rolled out. Adjoining the edges are slightly projecting fillets, enclosing a space through which runs a graceful wavy pattern in relief. The hollows were doubtless enamelled, as in the case of similar ornamentation on some bronze remains in the same "find." The space between the fillets or bands is occupied by a singular design, and this design, all but the circular bosses, four in number, may be described as in low relief. The intervening spaces, like those of the fillets above and below, at one time contained coloured

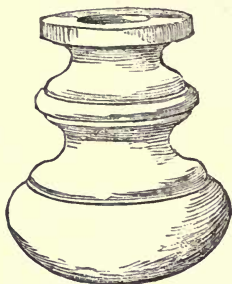


Fig. 19.



Fig. 20.



Fig. 21.



Fig. 22.

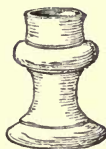
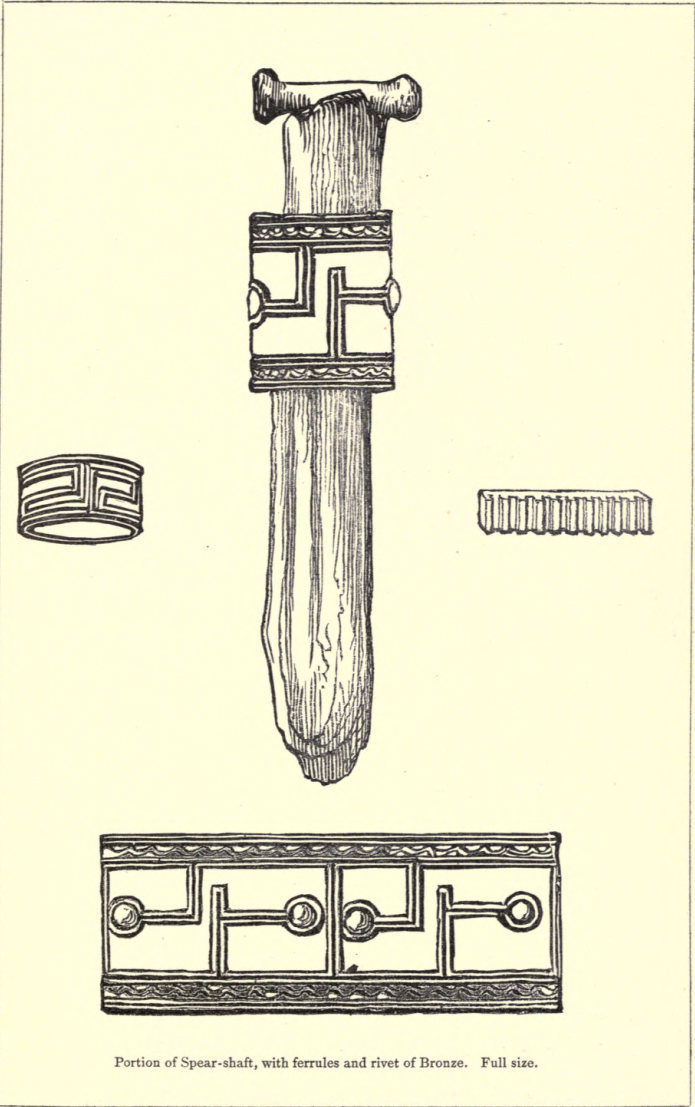


Fig. 23.

Spear Butt-ends of Bronze from Lisnacroghera.
Two-thirds natural size.



Portion of Spear-shaft, with ferrules and rivet of Bronze. Full size.

enamel. Altogether the style of this object represents as it were a combination of classic and Celtic ornamentation. The smaller and even more classic-looking ferrule to the left of plate xi. has already been noticed (*ante*, p. 64); the figure to the right (plate xi.) represents a bronze rivet of curious form, with well-sunk depressions on one of its sides, like those seen on a cog-wheel.*

The distinguishing characteristic of the bronze dagger or skean



Fig. 24.
Bronze Dagger from
Lagore.

from Lagore (fig. 24) consists in its open-work handle forming one piece with the blade. The weapon is $9\frac{3}{4}$ inches in length; the handle, $3\frac{1}{8}$. The blade, $1\frac{3}{8}$ inches in width, is flat, with broad bevelled edges. Fig. 25, found at Loughran Island, in the Lower Bann, is $4\frac{7}{8}$ inches in length by $1\frac{1}{4}$ in width. It is a thin, flat, angular-shaped dagger blade, decorated on the surface of the

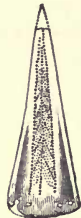


Fig. 25.
Bronze Skean from
Loughran Island.

mid-rib with a series of dotted lines, and pierced at the broad end by four small rivet-holes.† Daggers or skeans of bone, as well as of bronze and iron, have been frequently found in Irish lake dwellings, and knives formed of flint are not uncommon. The iron knives found in the crannog of Ballinderry, and now in the Museum of the Royal Irish Academy, resembled those figured in Munro's *Ancient Scottish Lake Dwellings*.‡

At the time the Catalogue of the Museum of the Royal Irish Academy was compiled by the late Sir W. Wilde, although some objects of bronze, supposed to have been ornaments on leather or wooden dagger sheaths, are mentioned by him, yet he was unable to point to any example composed altogether of bronze. Since that period, however, three sword-sheaths of that metal have been discovered in the crannog of Lisnacrogghera, county Antrim. Their workmanship is exquisite. They bear traces of enamel, and one of them contained a sword of iron so firmly attached to it by corrugation that any attempt to withdraw it must have involved the

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), pp 381-3.—W. F. Wakeman.

† *Cat. Mus. R.I.A.*, pp. 261, 463, 466.

‡ pp. 222-3, figs. 224-30.

mutilation or utter destruction of the bronze in which it was encased.

The decoration of the sheath, plate xii, No. 2, is very remarkable; the distinctive peculiarity being its spiral character, a perfect specimen of those combinations of involved circles and curvilinear lines, supposed to be characteristic of early Celtic art. Some portions of the sheath, near its end, still retain settings in enamel, the colour of which, though now faded, must have been rich vermillion. Enamel of the same hue and material once occupied the little saucer-like depressions which occur on the terminating snake-suggesting head. One of the circles (that had been, doubtless, intended to represent eyes) shows that it had been so filled, as were, probably, the little raised bosses, two in number, that may be observed at the opposite extremity. The interior of what might be styled the crescent-shaped patterns, nine in number, which occupy the chief plane of the sheath, as also the minor spirals of their adjacent spaces in the general figure, exhibit a design suggestive of basket-work. It is now impossible to determine whether the sheaths had been formed by casting, or were beaten into shape from a plain sheet of copper. It is evident that for the production of the ornamentation a graver had been used. The lines are sharply and deeply incised, and appear to have been intended for the reception of enamel of a black shade, some traces of which appear here and there. The enamel on the sheath "was, in all probability, *niello*, a composition of silver, copper, sulphur, and lead, the *nigellum* of ancient writers. It was not so hard or lasting as the ordinary enamel of glass or vitrified paste, some examples of which may be seen on several early ecclesiastical remains. The art of enamelling in *niello* is of the very highest antiquity; it was practised by the Egyptians. Specimens of it, of various ages, even of modern times, are numerous, and it appears to have been known to the Anglo-Saxons, as a ring of Bishop Ethelwulf (ninth century) is ornamented with it."

Although the decoration of the third sheath is similar in style, yet some of its features are peculiar, especially the dot and circle pattern along one of the edges, and which appears to have extended from handle to extremity.

Fig. 26 represents an object supposed to have been an ornamental termination of the pommel of a sword; it is of bronze, richly decorated with bands of white and red enamelled designs in

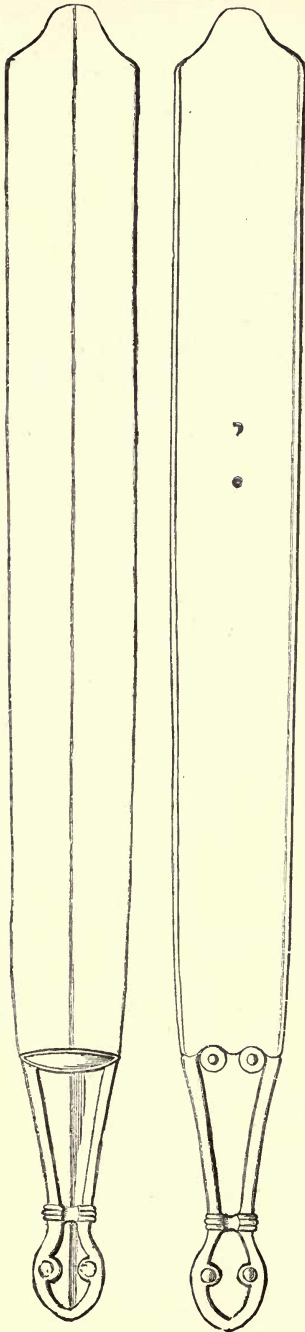


Fig. 1.—Sides of Bronze Sheath, containing an Iron Sword.

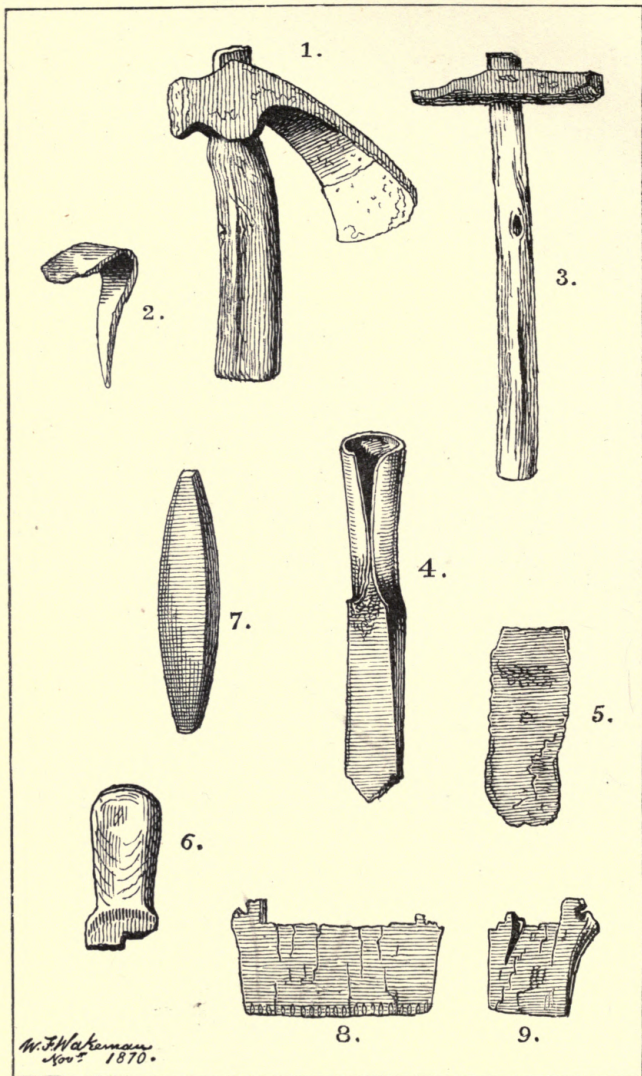


Fig. 2.



Fig. 3.

Figs. 2 and 3.—Sides of Bronze Sword Sheaths, from the Crannog of Lisnacrogthera.



Iron Tools, &c., found in the bottom of a "dug-out" at Cornagall.

a chevron or wavy pattern. The form is oval, and upon the upper rim are representations of two birds. Early Irish decorative art is characterised by bird-like forms, and figures of this kind are to be seen on early MSS. and on articles of the toilet or of personal adornment.*

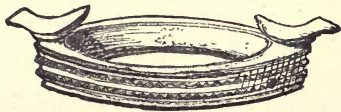


Fig. 26.

Bronze enamelled object from Lisnacrogghera.
Full size.

In a small lake called Cornagall (*the Hillock of the*

Dane or Stranger), about six miles from Cavan, there is an almost circular artificial island, thirty yards in diameter, its crannog nature, attested by rows of oaken stakes fencing its margin, showing above the summer level of the lake. In August, 1869, the water being then particularly low, a log of timber that bore evident traces of manual labour was ascertained to be the end of a "dug-out" embedded in soft, boggy matter. It proved, however, to be only a fragment, the other portion having been destroyed by fire, as evinced by the charred appearance of the remains: the large quantity of charcoal, half consumed sticks and chips visible on the margin of the crannog indicated its destruction also by that element. A set of iron tools lay on the floor of the canoe thus discovered, all here represented one-third their real size. The following is a brief description of them:—

Plate XIII., No. 1, is an adze in a perfect state: the metallic portion consists of soft iron, well steeled to a considerable distance from its cutting edge. No. 2 is an adze, scraper, or implement of the same class, but differing from the former in that it shows no perforation; its narrow-pointed end had evidently been intended for insertion in a wooden handle: the edge being broken, it is impossible to determine whether it had been steeled. No. 3 is a hammer of iron, the handle of oak, split at its upper extremity for the insertion of a wedge, which still remains. No. 4 is a celt or chisel—a somewhat similar object (from Lagore), but considerably broader, is preserved in the Museum of the Royal Irish Academy. Nos. 5 and 6 represent a thin, knife-like piece of iron and a wooden handle, originally, perhaps, portions of one implement; the wood, hollowed

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), pp. 373-379.—W. F. Wakeman.

for reception of the blade, is perforated for the insertion of a rivet, which no longer remains. With the iron tools in the canoe was found a remarkable object, composed of oak, use unknown; it is curiously notched upon one of its sides, near the edge. Figs. 8 and 9 represent two views of it.*

Fig. 27, an iron axe-head, from Lagore, is seven inches in length, massive, and of considerable weight; the cutting edge singularly

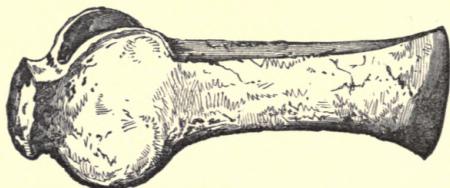


Fig. 27.—Iron Axe-head from Lagore.

narrow. A great number, made of stone, have come to light; and all that are composed of iron are well steeled round the cutting edge. Axe-heads are of great diversity of form.

A front and side view (fig. 31) is given of an iron adze, six inches and a-quarter long, from the crannog of Lisnacroghera, as were also the three objects of iron here represented (figs. 28, 29, 30), the uppermost, probably a knife, and having a hole through what appears to have been the haft end. The other two articles are said to be the remains of a saw, and the long fragment, perforated in four places, is supposed to be the strengthening bar attached to the piece of wood into which the back of the saw had been inserted.



Figs. 28, 29, 30.—Iron Objects from Lisnacroghera.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. (4th Series), pp. 463-5.—W. F. Wakeman.

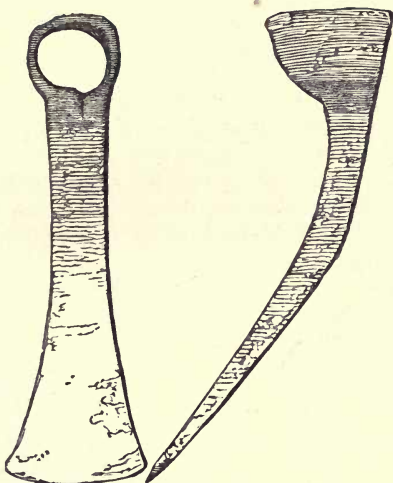


Fig. 31.—Front and side-view of Iron Adze from Lisnacroghera.

Hones.—Hones and sharpening stones are very commonly met with in crannogs; they plainly denote that at some period during their habitable existence the occupiers possessed metallic weapons or tools. The Cornagall “find;” presents two specimens of whetstones; one is given (plate XIII. fig. 7); the material dark-grey in colour, almost black, extremely hard, and close-grained; they are symmetrical in form, and partake greatly of the character of the so-called touchstones. Fig. 32 is a perforated example.

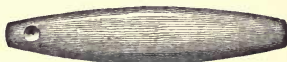


Fig. 32.—Whetstone.

Armour.—Amongst crannog “finds” no well-authenticated remains of defensive armour have been recorded, with the exception of a fragment of chain armour from Inisrush, and the ancient “golden bronze” shield from Lough Gur. The armour found on the site of the crannog in Lough Annagh is not here taken into consideration, it being evidently seventeenth century work.

In the townland of Monea, about five miles from Enniskillen,

county Fermanagh, in a small but deep lake,* there is a very fine circular crannog, about seventy-five feet in diameter, composed almost entirely of timber, and surrounded with remains of staking; a complete examination of the site was not possible, owing to the thick mass of roots and fibres thrown out by the trees with which it was studded. Upon digging into that portion of the shore offering the greatest facility, there were discovered several fragments of bones of the *Bos longifrons* and other animals, quantities of charcoal, some iron slag, and the remains of the curious iron helmet here figured, which must, however, be viewed as of com-

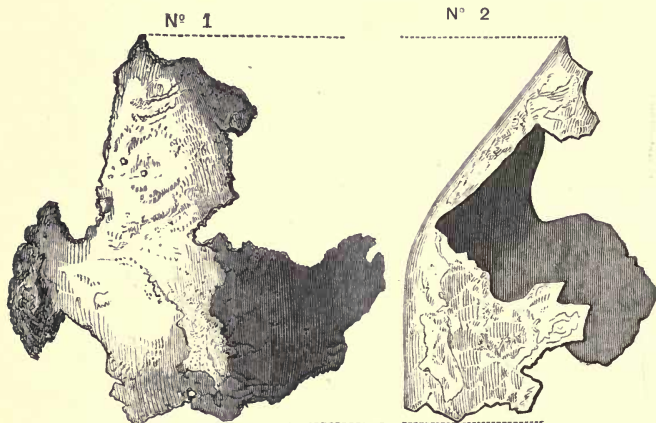
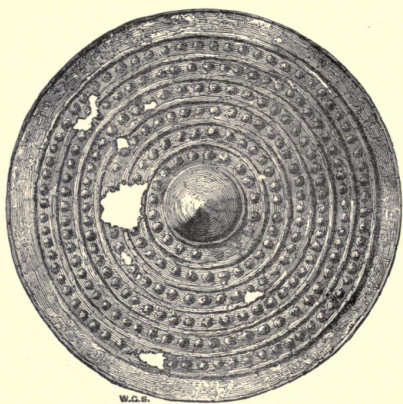


Fig. 33.—Iron Helmet found in the Monea Crannog, front and side view.

paratively modern date. The helmet is entirely devoid of ornamentation, is acutely conical in shape, and no traces of nasal or cheek pieces remain. A casque, very similar to this, was found in the river Nore, near Borris-in-Ossory, Queen's County, and is preserved in the Museum of the Royal Irish Academy.

* "There is a tradition that this lough contains a brazen cauldron full of treasure and guarded by a *piast* in the form of a serpent. Old people say that some years since a farmer actually saw the vessel, and with the aid of plough harness endeavoured to get it out of the water. The demon guardian, however, was too strong, the tackle broke, and with a horrible hiss the serpent regained his lair, taking the cauldron along with him."—*Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. (4th Series), p. 319.



Front View of Bronze Shield from Lough Gur. Diameter 28 inches.

The shield, of which the accompanying plate gives a correct representation, was found in the bog close to the banks of Lough Gur, County Limerick; and near it were the head and antlers of a *Megaceros Hibernicus*. This shield is a disc of bronze, slightly convex, and strengthened by a series of six concentric circles formed of hollow bosses, about two hundred in number, surrounding the central umbo. It appears to have been carried slung on the shoulder, the slinging loops being fixed so as to form bosses on the obverse equal in size to those contained in the circle: it was furnished with a very small handle, interiorly traversing the umbo. The rim is an inch three-quarters in width; the diameter, two feet three and three-quarter inches. The holes with which the shield is pierced are not proofs of warfare; it was the discoverer—a boy with a fishing gaff—who inflicted the injuries in bringing his novel spoil to land.* The Rev. James Graves considered the looseness of the rivets at the inside loops for the strap by which the shield was carried, to be proof that some material, most probably the hide of an animal, had originally formed an inner lining, as the thin bronze being in itself incapable of withstanding the impact of a fishing-gaff, could afford little real protection against even ordinary weapons of warfare. The coating of sheet bronze may be viewed rather as ornamentation than as rendering the shield more impenetrable; or it may have been but a variety of the arrangement of studs or circles of bronze affixed to bucklers of wood or leather—

“ Whose brazen studs and tough bull-hide
Had death so often dashed aside.”

In the Museum of Antiquities at Edinburgh may be seen a bronze shield of like character.

In the Crannog of Lisnacrogghera was discovered, with many warlike weapons, a disc of thin bronze, its centre from one-third its circumference descending into a hollow, at the base of which is an aperture: the ornamented side, as here portrayed, must have been intended to be the front, as the other side is quite plain. “Can it be the centre of a shield, other portions of which were composed of less durable materials? Certain it is, that thin circular

* *Proceedings R.I.A.*, vol. i., s. s. 1870–8, p. 155; *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. (4th Series), pp. 118, 122.

plates of bronze, displaying similar depressions, have been found both in England and in Ireland, and are supposed to be connected with the mounting of shields.”

The first figure to the left, plate xv., represents an object of the same class, but slightly smaller, and not so much ornamented. To the right are two views of another article, which presents all the appearance of an umbo. On the same plate (xv.) are four bronze rings: one of them is formed of two very thin plates, secured together by rivets of the same material; the three remaining rings are solid, and of a class which some antiquaries suppose formed a kind of defensive armour.” It is imagined that they were attached pretty closely together to portions of the ancient warrior’s garment; and it is worthy of remark that in the collection of the Academy a number of such rings, or objects very like them, may be seen looped together by bronze fastenings.*

Stone moulds, evidently employed in casting celts, weapons, tools, and other articles of bronze, have been brought to light. Fig. 35, discovered in the Crannog of Lough Scur, county Leitrim, is a triangular block of coarse white sandstone $7\frac{1}{2}$ inches long, $5\frac{1}{4}$ wide, and $3\frac{1}{2}$ thick, having both sides indented for castings. On the side here presented are moulds for a plain celt three inches long, and another celt four inches long, with cross strop and ring for attachment to the shaft.

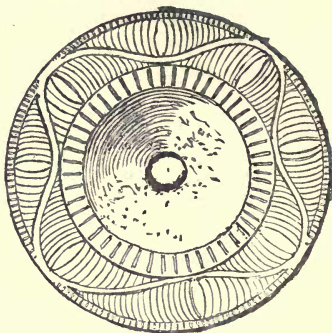
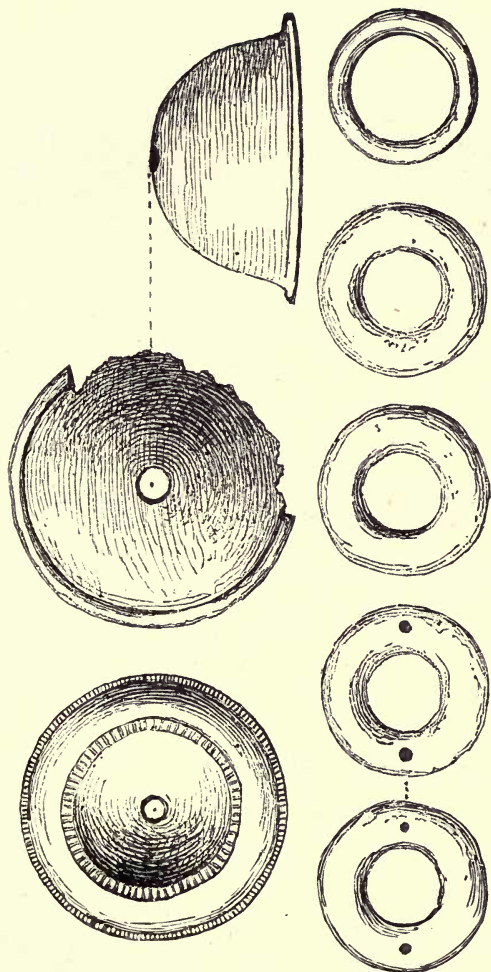


Fig. 34.
Disc of Bronze from Lisnacroghera.



Fig. 35.
Stone Mould from Lough Scur.

* *Journal, Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), p. 384.—W. F. Wakeman.



Boss-like Objects, and Rings of Bronze, from Lisnacrogghera. Full size.

Castings taken from this mould "delivered" implements closely resembling several in the Museum, R. I. A.* At Lough Ramor, county Cavan, a very curious block of sandstone was found, having a mould on three of its faces: the one here represented is for a broad arrow-head, with side rings. Upon the obverse is one for a small spear and leaf-shaped arrow; on the right side is another arrow-mould.†



Fig. 36.
Stone Mould from
Lough Ramor.

Vegetable Remains.—The ancient Irish set great value upon the hazel plant, a fact demonstrated by the frequent mention made of it in their best and oldest mss.; the numerous round stones met with in crannogs are supposed to have been used for breaking the nuts; their shells form the most considerable portion of vegetable remains in the kitchen middens, where beech nuts also are present; and it is known that within historic times the Irish kept large herds of swine that fed on masts in the woods, for then

"The forests cast their fruits in husks and rind."

Grain (species not stated), and various kinds of wild fruit, have been discovered; walnuts at Lough Nahinch, cherrystones at Balinlough.‡

Hammer-stones.—It cannot be doubted that in a few instances the round stones, sometimes designated "sling-stones," have been artificially worked, but the great majority must be looked upon simply as water-worn pebbles that had been utilized as hammer-stones. Many of the egg-shaped specimens are more or less frayed or chipped at their extremities; and similar stones, used, as is supposed, for breaking crustacea, are common in the "shell mounds" on the coast, as also amongst the "kitchen middens" of ancient settlements that abound within the sand dunes of the north-western littoral of Ireland. A large flat stone implement, with circular termination, rough sides, and polished edges, was found in the crannog of "The Miracles," county Fermanagh. It measured

* *Cat. Mus. R. I. A.*, p. 91, No. 83.

† *Ibid.*, p. 93.

‡ In Swiss lacustrine sites, stones of the cherry and of the sloe are found together in heaps, mixed with plentiful remains of the seeds of the blackberry and raspberry.

about eleven inches by three, and was one inch thick. Its flat end shows marks of wear, as if used for a pounding instrument. A stone exactly similar was found in a "kitchen midden" at Ardnahue, county Carlow, which had all the appearance of having been grasped in the hand for use, hence the edges polished from constant friction.*

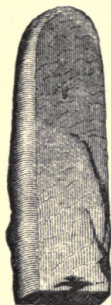


Fig. 37.—Stone implement from the Crannog of "The Miracles."

Mammalia.—Amongst animal remains, those of the *Sus scrofa* are very numerous. This species of wild swine lived in the woods and marshes,

was long-faced, and had great length of tusks.

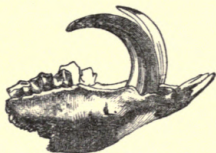


Fig. 38.
Lower Jaw of *Sus scrofa*.

The accompanying illustration represents a lower jaw of this ancient Irish pig, procured from the crannog of Lough Gur, county Limerick; it is of a yellowish-brown colour, a hue that pervades all the animal remains from that locality.

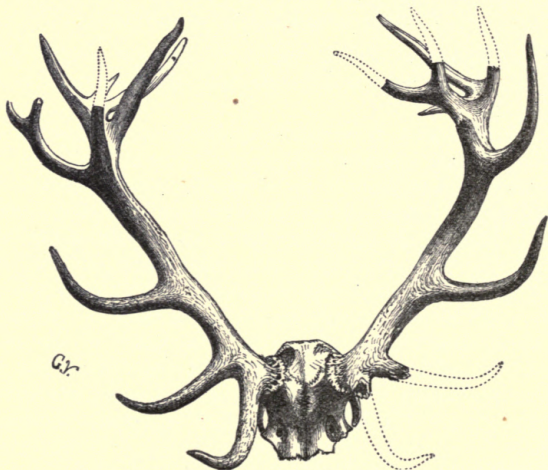


Fig. 39.—Head and Antlers of *Cervus elephas*.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. v. (New Series), p. 119.

Bones of the red deer (*Cervus elephas*) are extremely plentiful in lacustrine sites. It is the wild animal most frequently mentioned in early Irish history, and of which there were many until a comparatively modern epoch: so late as 1752 they abounded in the barony of Erris, county Mayo, and some few exist still in Killarney. The head and antlers here shown came from the crannog of Ballinderry, county Westmeath. The horns in this specimen are still attached to the cranium, and there were originally seven tines on the right, and eight on the left side. Bones of the *Magaceros Hibernicus*, or Irish big-horn, of the wolf and fox, of a small breed of horse, and of the ass, have been also met with. The remains of sheep belong to the horned class. There are several



Fig. 40.



Fig. 41.

Crania of Goats.



Fig. 42.

specimens of the four-horned variety of the goat (fig. 42), but those of the ordinary kind are more numerous: figs. 40 and 41 are from Dunshaughlin. Amongst the vast collection of animal remains on the site of this crannog were heads of canine animals: of the largest of these the accompanying cut gives a faithful representation. "It is nearly eleven inches in length, measured from the end of the occipital ridge to the alveolar process at the roots of the upper incisors, and is principally characterized by the magnitude of the crest."* The profile view of the outline, and the prolonged muzzle, rather lead to the belief of its having belonged to the true Irish wolf-dog of former times, a large long-coated hound, of an iron-grey colour.

Fig. 43.
Cranium of Wolf-Hound.

According to the best authorities, there were in Europe in

* *Proceedings, R.I.A.*, vol. vii., pp. 192, 211.—W. Wilde.

early times four great types of oxen: first, the *Bos priscus*, or Urus, the great Auroch, that even in classic times roamed through the forests of Germany; and its bones have been found in Swiss lacustrine sites: it was of great size, had long upright horns, a narrow forehead, high frontal crest, projecting orbits, and a warm shaggy coat, reddish-brown in colour. The second type; the *Bos primigenus*, was found by the Romans amongst the wilds of Europe; it had long, slightly-curved horns, set on at right angles to the head, but turning forward at the extremities, and spreading to a breadth of nearly five feet from tip to tip. The third variety, the *Bos trochocerus* had a very narrow head, and long cylindrical horn-cores rising high above the level of the back of the occiput, then curving forwards and inwards. The fourth type, which is almost peculiar to Ireland, has been denominated *Bos longifrons*, the long-fronted or small fossil ox—somewhat of a misnomer it must be confessed, because, properly speaking, it should be denominated *Bos latifrons*, from the exceeding breadth of forehead and face, in which particular it differs in an especial manner from the three former.

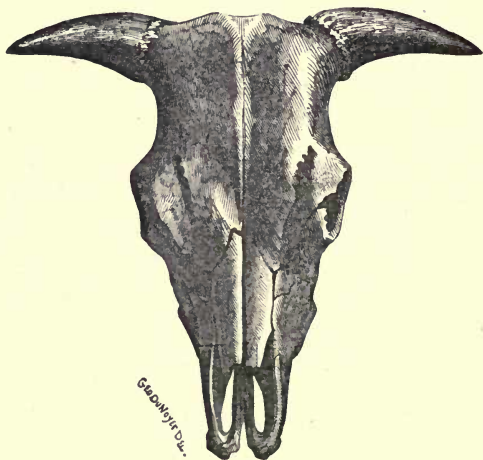


Fig. 44.—Cranium of domesticated *Bos longifrons*.

Specimens of the crania of four distinct breeds of cattle from crannogs are here given as described by Wilde, who named them very appositely: 1, the straight-horn, or *Drom-adharach*; 2, the crumpled-horn, or *Crom-adharach*; 3, the short-horn, or *Gearr-adharach*; 4, the Hornless, or *Maol*. Of the first type (Fig. 44), which was found at Dunshaughlin, Wilde states that there are none now existing in Ireland of this race, evidently domesticated descendants of the ancient wild *Bos longifrons*. The cranium is "broad in the face, flat on the forehead, nearly level between the horns, with but slight projecting orbits, short thick slugs or horn-cores rising but little above the occipital crest, and turning slightly inwards, like some of the best short-horned bulls of the present day. It is eighteen inches long in the face, and nineteen from tip to tip of horn-core."

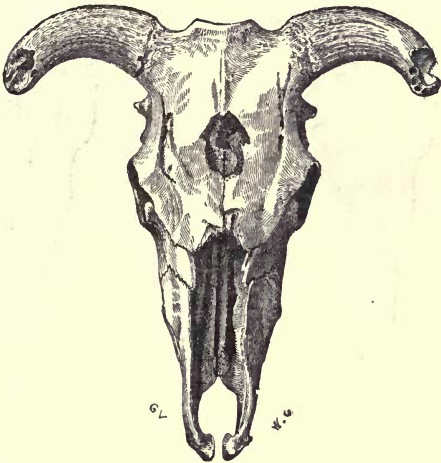


Fig. 45.—Cranium of the *Crom-adharach*, or Crumpled-horn Ox.

Fig. 45 represents a cranium of the *Crom-adharach* or Crumpled-horn, which, judging by its remains, appears to have been the most numerous variety. This magnificent head of a bull of the race is in point of size as fine a specimen as has yet been found: it is twenty-three and a-half inches long, and eight inches

across the forehead, which has been broken in by some blunt instrument, probably in slaughtering. The horn-cores are not so large at the base, but more than twice as long as those of the "straight-horned" race; they are curved considerably inwards, so that the tips of the horns, when perfect, must have approached much nearer than their bases. Each horn-core was, when perfect, about eleven inches long." This head, together with many similar crania, came from the crannog of Lough Gur, county Limerick.

The third class, or "short-horn", had long narrow faces, with exceedingly small horn-cores curving abruptly inwards. The cranium of one specimen (female) measured seventeen inches in length of face, six inches across the forehead, and eleven inches

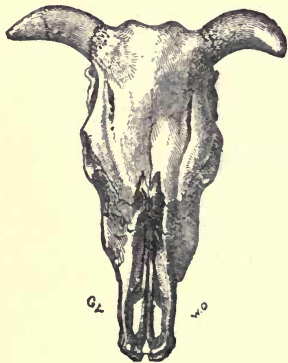
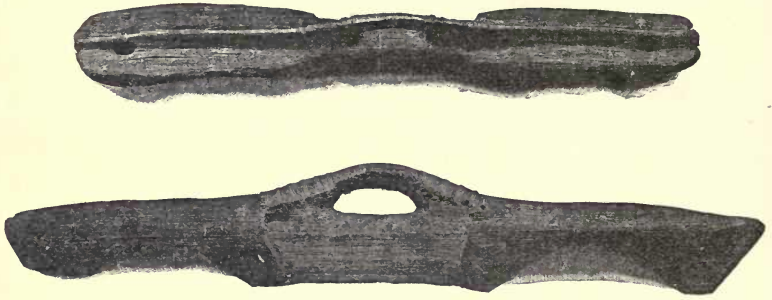


Fig. 46.
Cranium of the Gearr-adharach, or Short-horned Ox.

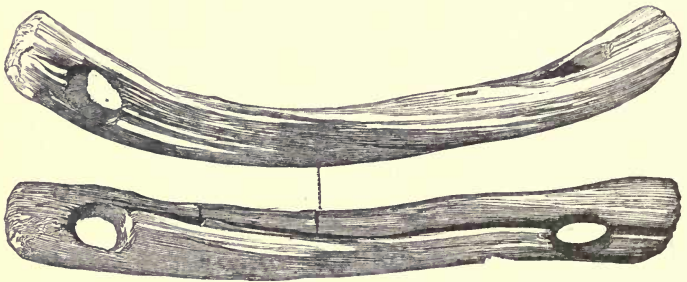


Fig. 47.
Cranium of the Maol, or Hornless Ox.

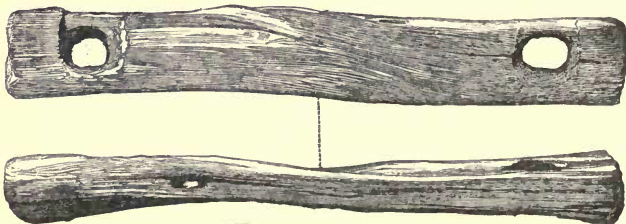
from tip to tip of horn-core. Fig. 46 gives a good illustration of this breed, which was abundant. The fourth class, the *Maol*, or Myleen (the hornless or bald), differs in nothing from those of the present day, save that it appears to have been of smaller size than its modern representative. The average length of face is about seventeen inches, by about eight inches across the orbits. Almost all the heads of this variety presented by Wilde to the R.I.A. came from the crannog of Dunshaughlin: they exhibit a remarkable protuberance or frontal crest.



Figs. 1 and 2.—Top and Side view of Yoke found in Donagh Bog.



Figs. 3 and 4.—Yoke found on the margin of Lough Erne.



Scale 0 1 2 3 4 5 Inches

Figs. 5 and 6.—Yoke found with Figs. 3 and 4.

Wooden Yokes found in Donagh Bog and on the margin of Lough Erne.

In Switzerland, at Robenhausen, a settlement of the Stone Age which had been buried under a bed of peat, it is stated by Keller that horizontal layers were discovered of a foreign substance, from two to ten inches thick, ascertained on analysis to be composed of the fæces of cattle. May not some of the dark strata on crannogs be composed of like matter? for there is documentary evidence that the Irish chiefs kept cattle on their islands in time of war. The Lord Treasurer Winchester, writing to announce the decease of Shane O'Neill to the Lord Deputy, says, that "he ought to inspect Shane's lodging in the fen, where he built his abode, and *kept his cattle* and all his men," &c., &c. This "abode" is known to have been a crannog.

Butter.—The custom of burying or hiding butter in bogs is probably of very ancient origin, but, like many old customs, was carried down in Ireland to a very late period. Thomas Dineley, in a diary of his visit to Ireland in the reign of Charles II., states that the Irish used "Butter layd up in wicker basketts, mixed with store of a sort of garlick, and buried for some time in a bog." Sir William Petty mentions "butter made rancid by keeping in bogs." The custom is thus described in the Irish *Hudibras* :—

"Butter to eat with their hog
Was seven years buried in bog."

The Farøe islanders had a similar practice with regard to tallow. Bog butter, or mineral tallow, is usually met with in single-piece wooden vessels, like long firkins.

Yokes.—For beasts of burden, the yoke was in use from the earliest ages, but any that have been hitherto discovered, whether double or single, appear too small for cattle of species still existent; however, the old race of domesticated kine in Ireland may have been smaller in size than those of the present day. Probably the first yoke that attracted notice was the one described and illustrated by Wilde in his Catalogue of the Museum of the Royal Irish Academy, for it was not until a comparatively late period that the attention of antiquaries was directed towards this class of remains, usually found covered by a considerable depth of bog. A good idea of their general appearance is conveyed by the accompanying illustrations (plate xvi.) representing two yokes of wood that were discovered under eighteen feet of peat in Donagh,

county Monaghan, in the year 1867. Fig. 2 is drawn on a somewhat larger scale than fig. 1. Figs. 3 and 4 represent yokes found by turf-cutters about the year 1874, deeply buried in a bog abutting on Lough Erne. One of them was composed of oak. Figs. 5 and 6 are specimens curiously contorted, twisted, and split, the result of over-hasty drying.*

Piscatory Implements.—In the crannog of Drumgay, county Fermanagh, there were implements for forming the meshes of

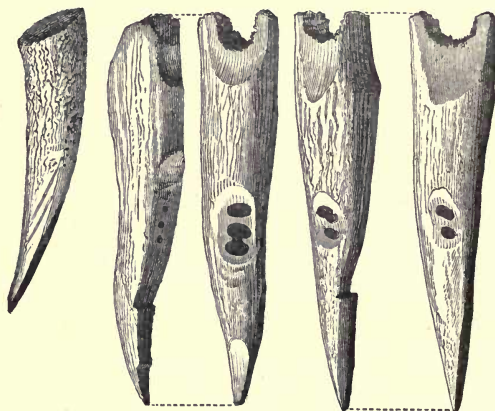


Fig. 48.

Fig. 49.

Fig. 50.

Fig. 51.

Fig. 52.

Piscatory Implements or Arrows and Spear-heads.

nets. They consisted of nine pieces of deer's horn, varying in size from six to little more than three inches in length. Four of them are curiously fashioned. Similar objects, composed of the tips of deer's horn, have frequently occurred in crannog "finds," and, during excavations made about the year 1851, in Christchurch-place and Fishamble-street, Dublin, many like specimens were discovered. There can be little doubt that they were used for making fishing lines or nets: indeed one of the discoverers having procured some thread, at once proceeded to illustrate his theory by the manufacture of a fishing line. The suggestion has also been

* *Journal Royal. Hist. and Arch. Asso. of Ireland*, vol. v. (4th Series), pp. 507-8.

offered that they may have been arrow or javelin heads. From vegetable fibre the crannog dweller made nets with which he obtained an ample supply of fish from the waters around him, and

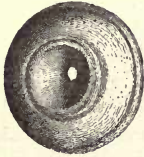


Fig. 53.—Sink-stone.
Half-size.

sink-stones, used for either fishing lines or nets, are by no means a rare “find.” Quoit-like discs of sandstone, pierced with a hole to attach them to the bottom rope of a net, are not uncommonly employed, even in the present day, in remote localities. A bronze fishing-hook



Fig. 54.—Bronze Fishing-hook. Full-size.

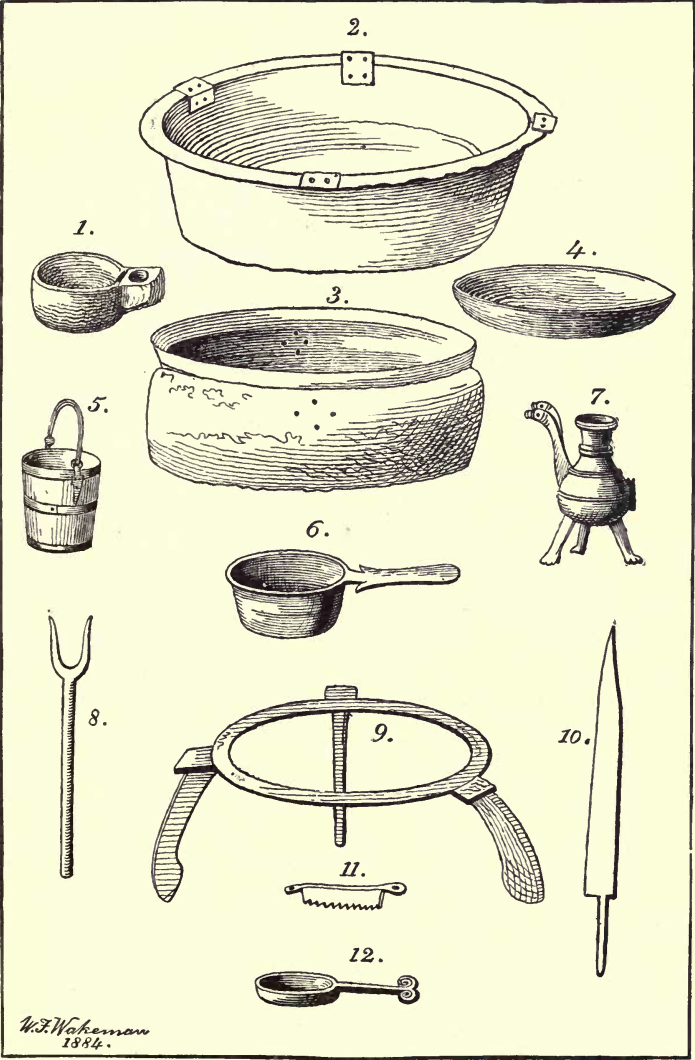
picked up from the bottom of a lake is here figured, and in plate xxix., vol. ii., of Keller’s work, there is a representation of one closely resembling it. In 1845 there was found in Lough-na-Glack, county Monaghan, a bolt or missive of bronze, 16½ inches in length, evidently used for spearing fish, and of which two illustrations are given in Shirley’s *History of the County Monaghan*. The thong or string attached to this weapon, and by which it was hauled back after projection, was called in Irish *fuainemain*. The name is in the present day applied by the herring fishermen of the south of Ireland to the bolt-rope of their fishing-nets.

Household Economy.—In crannogs vessels of iron have been brought to light, also many cooking utensils of bronze; some, as may be noticed, of remarkable shape. Cauldrons both of large and small dimensions, hammered out of single sheets of copper, are numerous.* Plate xvii., No. 1 is a cup composed of “soapstone,” discovered with other remains, now scattered and lost, in the crannog of Drumsloe, near Ballinamallard, county Fermanagh. Articles hollowed out of stone are somewhat rare in Ireland, but more than one fine specimen occurs in the collection of the Royal Irish Academy. A very perfect example similar to that found at Drumsloe, and represented at page 114, fig. 87, in the Catalogue, was brought to light in the river Shannon, and a portion of another may

* A fine example of a utensil of this kind was discovered at Navan Rath (the ancient *Eamhain*), the seat of the sovereigns of Ulster down to the year A.D. 332; and a curious account of the value in which bronze cauldrons of this description were held in Ireland in the middle of the fifth century is given by Dr. Reeves in his translation of a portion of the “Book of Armagh,” written in the eighth century.

be seen in Canon Grainger's interesting Museum at Broughshane, county Antrim. These curious vessels, though formed of stone, are usually found with objects belonging to a supposed late iron period. Cups strongly resembling them have been exhumed in connexion with the so-called "Picts' Houses" in Scotland, and in some of the Lake Dwellings of that country.* No. 2 is a cauldron-like vessel of thin, hammered bronze, measuring $22\frac{1}{2}$ inches in diameter by six inches in depth: it was found with many other objects of interest in the crannog of Cloonfinlough. On its upper side it presents a rim or lip measuring one inch in breadth, strengthened by four small plates, fastened to the vessel by bronze rivets, and placed at about equal distances from each other. No. 3 represents the upper portion of what had been a very large cauldron, with rivet-holes indicating the points where staples had been fixed for reception of rings, or the ends of a handle. The bronze, beaten to extreme thinness, of which this specimen is composed, seems to be of very early character. No. 4, a shallow bowl of oak, about twelve inches in diameter, exhumed, with other remains, from the crannog of Breagho, county Fermanagh, was quite perfect when first laid bare, but on exposure to the atmosphere it split into several pieces. No. 5, found in the crannog of Cloonfree, county Roscommon, is a beautiful little vessel hollowed out of a single piece of wood, and tastefully mounted with bronze fittings, but the scale on which it is drawn is too small to admit of the delicacy of its ornamentation being properly displayed. No. 6 represents an artistically formed ladle of extremely thin bronze, measuring in all $11\frac{1}{2}$ inches, the internal diameter of its bowl being five inches. This ladle was discovered by turf-cutters in the bog of Bohermeen, county Meath, in close proximity to a large number of pointed stakes and other remains of timber, doubtless portion of the framework of a crannog; but in 1848—the date of its discovery—very little was known about lake dwellings, and few particulars of the "find" can now be chronicled. This vessel was bought at the time by W. F. Wakeman, and by him (together with a beautiful bronze pin found with it) presented to the late well-known antiquary Petrie, amongst whose collection, deposited in the R. I. A., it may now be seen. In the same Museum are several similar vessels, turned up during drainage

* See *Ancient Scottish Lake Dwellings*, p. 213, fig. 195.



Culinary Utensils, Implements, &c., stone, bronze, wood, and iron.

operations in various parts of the country. They are supposed by some writers, but apparently without sufficient reason, to be of Roman origin: in Ireland, however, they are usually discovered in connexion with remains of purely Celtic type, and it is not known that in any instance classic decoration occurs upon an Irish example, although in Munro's *Ancient Scottish Lake Dwellings*, a bronze vessel (fig. 13. p. 45) of similar style is ornamented in undoubtedly late Roman art. No. 7 is a "coffee-pot"-shaped utensil of bronze, discovered in the crannog of Rooskey, parish of Kill-evan, county Monaghan, in June, 1876. It is seven inches in height, by four in breadth at the centre. The sketch is from a photograph of the original, kindly supplied for this work by Dr. Gillespie, of Clones. The spout branches into two, each terminating in the form of a monster's head; the legs are finished like claws, and the animal ornamentation on the concentric rings or bands encircling the body of the vessel furnishes distinct evidence of very late Celtic art. The handle no longer remains. This is the only example recorded as having been as yet met with in an Irish crannog, although bronze articles of the same class are not uncommon—at least six others may be seen in the Museum, R. I. A., all from different localities, found either in bogs or in the beds of rivers. A similar example, save that it does not possess a dual spout, is figured at p. 24, *Ancient Scottish Lake Dwellings*, and thus is established another point of resemblance between the crannog remains of the two countries, although Stuart in his *Notices of Scottish Crannogs* remarks, that hardly any mention is made of the bronze dishes, pots, or "coffee-pot" vessels, amongst the relics of Irish crannogs which are so frequently found in those of Scotland. Characteristic examples from Lagore of iron remains of a domestic character are No. 8, evidently a flesh-fork, which measures, at present, $13\frac{1}{4}$ inches from end to end; and No. 10, a knife, measuring eighteen inches.

It will be seen that the majority of crannog culinary articles are more or less rounded at their base; thus when placed over a fire they would require to be suspended or have a support to steady them. No. 9, from the great crannog of Lough Gur, county Limerick, is composed of very fine iron, which had evidently been smelted with wood charcoal; it is admirably adapted for the purpose of sustaining a pot or other vessel over a fire of peat or wood, but it is a comparatively modern article.

Bones of deer and other animals found in connexion with Irish crannogs frequently bear marks of a saw, and No. 11, from Lagore, represents an instrument of this class, measuring six inches in length. It was, no doubt, secured by rivets to a back or handle of wood, but the rivets no longer remain. Saws of this kind, some larger, some smaller, have constantly accompanied crannog implements of iron. No. 12, also from Lagore, is, seemingly, a ladle or miniature frying-pan, scarcely eight inches in length.

In the Museum of the Royal Irish Academy there is a beautiful thin saucer-shaped vessel, hammered out of a single piece of bronze that has been cleaned to show the rich red golden colour of the metal.



Fig. 55.—Saucer-shaped Vessel of Bronze from Cloonfinlough.
About one-fifth real size.

It is $7\frac{3}{4}$ inches in diameter, the rim pierced with two small holes as if for suspending it, and decorated externally with a number of indentations.* The crannog of Lisnacrogghera furnished a vessel of fairly graceful form, composed of extremely thin bronze; but it is unprovided with either handles or holes for suspension.



Fig. 56.—Bronze Vessel from Lisnacrogghera. Slightly over six inches in diameter.

* *Cat. Mus. R.I.A.*, p. 533.

A bowl or vessel of bronze measuring $5\frac{1}{4}$ inches in diameter and three inches in height, together with an iron ladle, were amongst



Fig. 57.—Bronze Vessel and Iron Ladle from Lagore.



Fig. 58.—Iron Vessel from Lagore.
One-tenth the real size.

the numerous objects procured at Lagore,* also another vessel $9\frac{7}{8}$ inches in diameter, formed of thin iron.

Querns, or hand-mills, both of ancient and modern type, either in a perfect state or else more or less broken, have been found in most crannogs. "*Grain-rubbers*, for triturating corn, are, perhaps, the most primitive implements used in the manufacture of cereal food. Each consisted of a flag or flat stone slightly hollowed upon the upper surface, so as to hold the parched grain, and a convex rubber, or mullet, which was passed backwards and forwards with the hand, and thus bruised the corn into meal. Querns are evidently the next step in food-making machinery. . . .

Although there are several varieties, the most simple and natural division of them is twofold. The first is that in which the upper and lower stone are simply circular discs from twelve to twenty inches across, the



Fig. 59.—Grain-rubber. About one-tenth the real size.

upper rotating upon the lower by means of a wooden handle, or sometimes two, inserted into the top, and fed or supplied with corn by an aperture in the centre, analogous to the hopper, and which may be termed the 'grain-hole' or eye. In this quern

* *Archæological Journal*, vol. vi., p. 103.

the meal passed out between the margins of the stones. The upper stones are usually concave and the lower convex, so as to prevent their sliding off, and also to give a fall to the meal." The second variety is usually styled a *pot-quern*, and has a lip or margin in the lower stone, which encircles or overlaps the upper, the meal passing down through a hole in the side of the former. Most of this variety are of smaller size than the foregoing, which is evidently the more ancient and simple form, as well as that which presents us with the greatest diversity. The upper stone in the pot-quern was turned, as in the first-named kind, either by one or sometimes by two wooden handles. This kind of quern was denominated "*bró*." The word, used in the signification "to grind," occurs in Proverbs, chap. xxvii., v. 22: "Though thou shouldest bray a fool in a mortar among wheat with a pestle, yet will not his foolishness depart from him."

A gentleman in Ireland, who at the commencement of the present century saw a quern at work, describes it as having the upper stone (fig. 60, A) about twenty-two inches in diameter, its under surface considerably concaved; the lower stone (B) was convexed, so that an easy descent was afforded for the meal (E) when ground. In the centre of the upper stone was a circular hole nearly three inches in diameter, and through it the quern was "fed," as it is called, *i. e.* supplied with fresh corn (EEE) as fast as the bran and flour fell from the sides of the machine. Within about two inches of the edge was set an upright wooden handle (D) for moving the upper stone, which rested in equilibrio on a strong peg or pivot (C) in the centre of the lower stone. There were generally two women employed in the operation. They sat on the ground facing each other, the quern between. One of them with her right hand pushed the handle to the woman opposite, who again sent it to her companion, and in this manner a rapid rotatory motion was communicated to the upper stone, whilst the left hand of the operator was engaged in the "feeding" process. The corn, previously dried over a slow fire, when arrived at a certain degree of crispness, was taken up to be ground. This

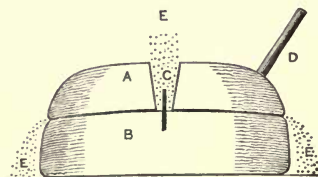


Fig. 60.—Section of ordinary Quern.
About one-fourteenth the usual size.

preparation prevented the raw taste perceptible in meal from modern mills. Little cookery was required. The ordinary way of using it was to mix the meal in its raw state with milk, to the consistency of thick porridge, and it was then eaten without any other accompaniment, the simple mixture being called "a crowdie." A quern is evidently the primitive kind of mill referred to in the Scriptures, where it is said "two women shall be grinding at the mill:" and Shakspeare makes Puck to "sometimes labour in the quern."

In the centre of the crannog of Drumgay, county Fermanagh, there was a large block of stone punctured with a cross, and another resembling it was discovered many feet deep, in the centre of the pagan earn of "The Miracles," in the same district. Similar figures are inscribed or punched upon rocks and upon the sides of natural, or partly artificial caves, as at Loch na Cloyduff, *The Lake of the Dark Trench or Diggings*, and the "Lettered Cave," in the cliffs of Knockmore, "*Great Knoll*," county Fermanagh. Within the precincts of well-authenticated pagan tumuli, as at Dowth, cross patterns have been found, accompanied in several instances by "scorings," at present unintelligible. On the base of a sepulchral urn, preserved in the Museum of the Royal Irish Academy, the cross is displayed, and the figure of a cross within a circle occurs on an urn discovered at Broughderg, county Tyrone. Mr. Albert Wray has described some spoon-shaped objects of antique bronze, all decorated with the figure of a cross similar in design to the symbol as observable upon the earliest Irish quernstones. The bronze articles in question exhibit a style of workmanship which has invariably been associated with pre-Christian times in both Britain and Ireland; whilst in the latter country discs and thin plates of gold belonging to the same period have been found presenting a cross-like ornamentation. At Drumgay, at Lough Eyes, at Roughan, and at Drumsloe, *the Ridge of the Host*, were cross-inscribed querns. Drumsloe lake, now almost drained, is situated within a short distance of Ballinamallard.

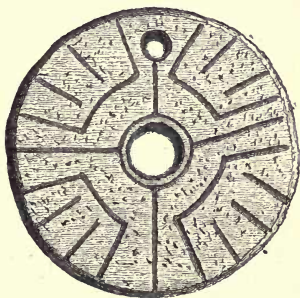


Fig. 61.—Upper surface of Quern from the Crannog of Drumsloe. About one-ninth the real size.

county. Fermanagh. Interesting objects, now dispersed or lost, have been there from time to time turned up on the site of a crannog, the traces of which are now nearly obliterated, and the curious quern or *bro*, of which the accompanying cut is a facsimile, is one of the few remaining relics authentically connected with the locality. The quernstone measures one foot six inches in diameter.*

About the year 1839, upon lowering the level of the water for drainage purposes in Roughan lake, near Dungannon, county Tyrone, an island artificially formed was exposed to view. On it were numerous fragments of pottery and bones, a bronze pin, a few bronze spear-heads, together with a quern. The illustration (fig. 62) represents the top stone, which is eighteen inches in diameter, and two and a-half inches thick; it is formed of sandstone, the ornamentation being in high relief. The hole or socket for reception of the handle is in one of the arms of the cross, and goes quite through the stone.† Portions of a highly



Fig. 62.—Upper surface of Quernstone from Roughan Lake. One-eighth the real size.

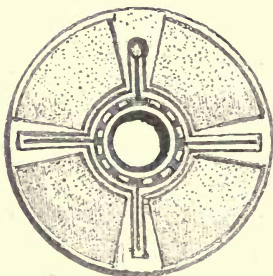


Fig. 63.—Quernstone from Lough Eyes. About one-tenth the real size.

decorated quernstone, restored in the accompanying illustration (fig. 63), were found in one of the crannogs in Lough Eyes.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. (4th Series), p. 322.

† It is No. 19 in the collection of querns in the Museum R.I.A. Roughan Crannog is said to be the last retreat of Sir Phelin O'Neill in 1641: it held out until boats were brought to the lake from Charlemont to aid in the attack.

On "Bone Island," in the lake of Drumgay, several fragments of quernstones were collected. Two of those obtained were inscribed with a cross-like ornamentation, one of them presenting a most unusual style of crannog geometrical decoration.

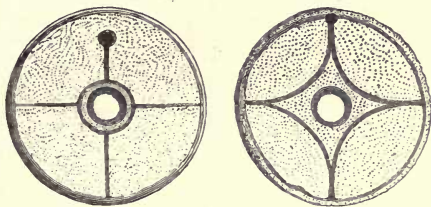




Fig. 64.—Quernstones with Cross and Geometrical Decoration.
About one-twelfth the real size.

On pottery at Ballydoolough, a cross pattern was observable, as also on a comparatively modern iron article at Cloonfinlough, and there was in a crannog in Argyleshire a Greek cross, with crosslets as a pattern, or ornamentation, burnt into a piece of oak.* The "Croix gammée," or Swastika, occurs on sculptured stones in Scotland, and appears on a mosaic pavement in the recently discovered Roman villa in the Isle of Wight. In Keller's *Lake Dwellings of Switzerland*,† a cross within a circle is represented: it was found at Auvernier, and had seemingly been an article of personal adornment. Layard, in his work entitled *Nineveh and Babylon*, states that he found what is now called the Maltese and Irish cross in such connexion as led him to identify it with the sun. In these ancient sculptures the cross was often inserted within a circle, which, having neither beginning nor end, was considered to be the emblem of eternity, and may be so observed in Assyrian sculptures. Dr. Schliemann, in his *Troja* (p. 167), gives a representation of a curious copper or bronze ring, about the size of an ordinary napkin ring, but very heavy. It has five compartments, each ornamented with a cross marked by openings cut in the metal.

* *Ancient Scottish Lake Dwellings*, p. 55.

† Plate LVII., fig. 13, vol. ii., 2nd ed.

Amongst the whorls found by Dr. Schliemann, numbers are ornamented with  and . The same sign is found in Pompeii, and amongst the ancient heathen population of Yutacan and Paraguay. "Later still, it was even adopted by the Christians as a suitable variety of their own cross, and became variously modified geometrically." In No. 1 crannog, in the lake of Drumgay, there was a very peculiar cross-sculptured stone, two feet in length by three inches in thickness. It is seemingly of no great antiquity, and was most probably intended for a tombstone to be placed in the neighbouring cemetery of Devenish.

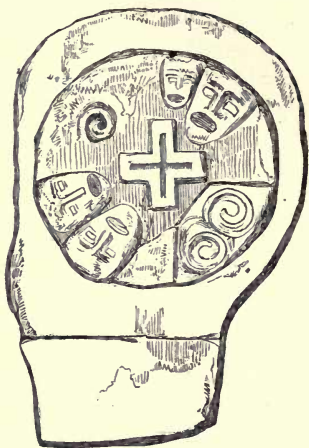


Fig. 65.

Sculptured Stone from No. 1 Crannog, Lake of Drumgay. About one-eighth the real size.

Human Remains.—There have been, as yet, few instances of the discovery of human bones in crannogs. At Dunshaughlin, in Meath, at Ardakillen and Cloonfinlough, in Roscommon, the people appear to have met with a violent end, and there is no reason to believe that the remains are very ancient. The lake dwellers of Switzerland had cemeteries on the mainland, directly opposite their habitations, and it is probable that the Irish disposed of their dead in the same manner, but up to the present this subject has not been investigated.

Fireplaces on the Shore.—Numerous fireplaces on the shore adjoining crannogs were discovered at Drumkeery lough, and at Lough Eyes. In the immediate vicinity of the latter were traces of gins or traps for catching game. In the neighbouring bogs labourers have, at various times and in different localities, met with stakes planted in the original surface soil, in a vertical position, and sharpened to a point, seemingly by a clean-cutting metallic tool. Since fixed in their original position the peat had grown so much that it is now, on an average, about five feet above

the pointed ends. It has been often surmised that stakes planted thus were in some way connected with the trapping of deer and other wild animals.*

Pottery.—Dr. Schliemann rightly designates fragments of pottery as the cornucopia of archaeological science; it is always abundant, and it possesses two qualities—those, namely, of being easy to break, and yet difficult to destroy, which render it very valuable in an archaeological point of view. Investigation has shown that the inhabitants of crannogs had in use a description of fictile ware, distinctly characteristic in style, graceful in form, and well manufactured, admitted by English archaeologists to be superior to that possessed by the Britons or early Saxons. It is known that the primitive people of Ireland possessed the art of constructing excellent fictile ware for mortuary purposes of fire-hardened clay; they could therefore manufacture every-day culinary vessels of the same material. An immense quantity of pottery has been found in connexion with many crannogs, by which means facilities are afforded for comparing ordinary domestic vessels with the urns and vases of an undoubtedly prehistoric and pagan period. The great majority of specimens of crannog pottery present designs marked upon them, similar in style to the ornamentation observable on the walls of sepulchral cairns and the vessels deposited in them, on golden or bronze ornaments, on implements, and on the surface of rocks, all of which are usually acknowledged to date from prehistoric times.† Mr. Rau states that the fictile vessels discovered by him amongst the debris of Indian relics on the left bank of the Cahokia Creek, on the Mississippi, opposite St. Louis, resemble the ancient Irish fictilia, “more especially those found in crannogs and kitchen middens.” One fragment showed punctured and impressed ornamentation of the class so usual on Celtic urns. Mr. Graves observes that the arts of primeval peoples may be illustrated by comparison with those that prevail under similar conditions of civilization existing in or near our own times. Thus in India cromleac builders raise their megalithic monuments on hills. In the Hebrides, cloghans, *i.e.* mortarless stone-built and roofed habitations, similar to those strewn over the western littoral of Connaught, and also lake dwellings in various parts of the world, are even still occupied.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. iii. (4th Series), p. 318.

† *Ibid.*, vol. ii. (4th Series), pp. 308-9.

From the crannog of Lough Faughan, Co. Down, was procured the pitcher No. 9, Museum of the Royal Irish Academy; also another pitcher, 13 inches in height, and 32 in girth, of a description of pottery so light as only to weigh 5 lbs. 10 oz. It figures as No. 10 in the collection of food implements. Externally it is dark in colour, and being partially glazed, is, therefore, not of very ancient date: it is so rounded at the bottom that it cannot stand upright: about the neck, and for some distance down the sides, it is tastefully decorated, and the handle is peculiar in form.*



Fig. 66.—Pitcher from Lough Faughan. About one-seventh the real size.

The accompanying engraving (fig. 67), a good specimen of another class of fictile ware, represents, in a restored form, one of the finest of the crocks found at Ballydoolough. In colour it is light-yellowish red; it measures three feet two inches round the



Fig. 67.—Fictile Vessel from Ballydoolough, restored

mouth, and is tastefully ornamented on the rim and sides. This decoration had been evidently impressed upon the soft clay before the vessel was burnt, and the pattern conveys the idea of such

* *Cat. Mus. R.I.A.*, p. 158.

antiquity that, if found in a tumulus, it would be referred to a prehistoric age.



Fig. 68.—Fictile Vessel, Drumgay Crannog, restored. Quarter size.

A large fragment of fictile ware was discovered on one of the crannogs in the lake of Drumgay; it was of size sufficient to enable a restored representation (fig. 68) to be made of a vessel that had been in use by the former inhabitants of the crannog for culinary purposes.

The following illustrations (figs. 69 and 70) represent two of the

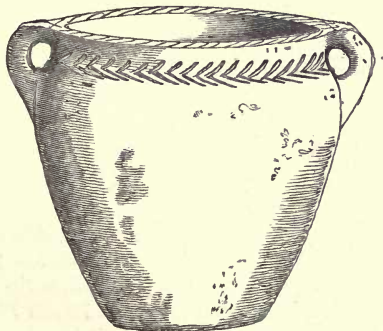


Fig. 69.—Restored Vessel from Lough Eyes. One-fourth the real size.

vessels found in the crannog in Lough Eyes, county Fermanagh,



Fig 70.—Restored Vessel from Lough Eyes. One-fifth the real size.

carefully restored from fragments discovered on the sites. With the remains of these vessels were numerous flat discs formed of the same kind of clay, and that would seem to have been their covers or lids.

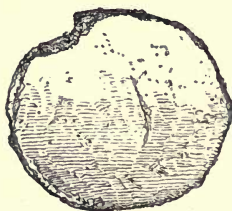


Fig. 71 —Baked Clay Pot Cover from Lough Eyes. One-fourth the real size.

For the escape of steam during the process of boiling, a simple provision is observable in several of these earthen pots. In the neck of the vessel, just below the point where the lid would be supported, is a small circular hole (see figs. 72 and 73). The aperture occurs in numerous fragments, but it is not now possible to

determine whether this class of vessel, when entire, was invariably perforated.*

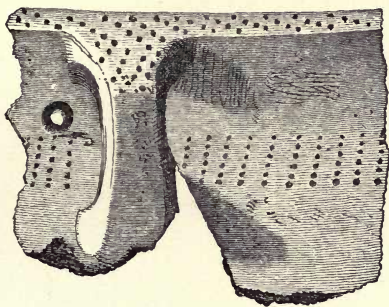


Fig. 72.—Portion of a Perforated Vessel from Lough Eyes. One-half the real size.

About 140 fragments of earthen vessels were discovered in the Ballydoolough crannog—none, however, in an entire state; but

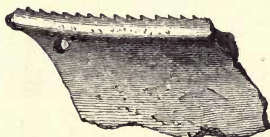


Fig. 73.—Portion of a Perforated Vessel from Lough Eyes. One-third the real size.

several pieces of the same article being found to fit together, a restoration giving a correct idea of the perfect vessel was easily attained. Fig. 67 (see *ante*, page 92), has been thus reconstructed. The next engraving (fig. 74) represents a fragment of what must

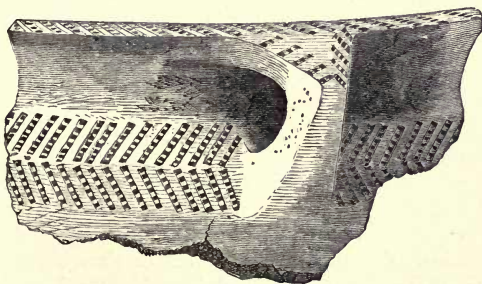


Fig. 74.—Portion of Fictile Vessel found on Ballydoolough Crannog. One-half the real size.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. (4th Series), p. 556.

have been a very large vessel, ornamented on the side with a chevron, and on the rim with an oblique pattern; it is composed of very hard-baked clay, dark in colour.

A third fragment (fig. 75) partakes of the character of the last described. The decoration is more elaborate and the punctured design or chevron slightly different. Many of the indentations are

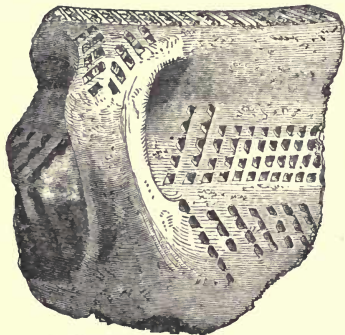


Fig. 75.—Portion of Fictile Vessel found on Ballydoolough Crannog.
One-half the real size.

of semicircular form, and not angular or semiangular, as in most of the other crocks. The material is very hard, like fig. 74, and of a dark colour. Fig. 76 is portion of a large, straight-lipped vessel,

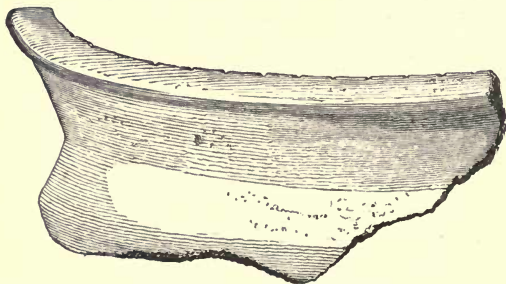


Fig. 76.—Portion of unornamented Vessel.

that measured originally over three feet in circumference round the rim; it is unornamented, and formed of hard, well-baked, darkish-coloured clay.

Fig. 77 is the only pattern of its kind found at Ballydoolough. It is drawn half-size. Whether this specimen and fig. 76 were originally furnished with ears it is now impossible to say. Figs. 78 and 79, drawn one-half the real size, represent portions of vessels. The larger fragment bears upon its ear, or handle, two figures somewhat like a St. Andrew's cross; on the smaller there is only one.



Fig. 77.—Rim Ornament of Fictile Ware.

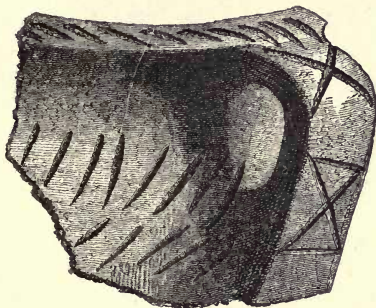


Fig. 78.

Cross inscribed Pottery.

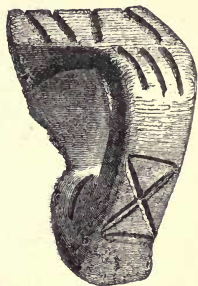


Fig. 79.

Cross inscribed Pottery.

Fig. 80, drawn half-size, exhibits a bold but rude chevron pattern.

There were thirty-five distinct patterns on the various fragments unearthed, yet the locality was not thoroughly explored. Specimens of the pottery from Ballydoolough were forwarded to Mr. Albert Wray, a well-known authority on such subjects, and he would not refer them to a very early age, or to that in which the use of bronze was prevalent. The mode of ornamentation appeared to present a slight resemblance to the "Cuerdale Hoard," which is sometimes ascribed to the ninth century. W. F. Wakeman, however, is of opinion that amongst the numerous designs

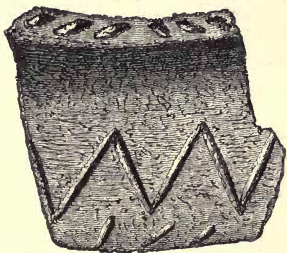


Fig. 80.—Portion of Fictile Vessel found at Ballydoolough Crannog.

found upon the crannog vessels there is none suggestive of the work of Christian times in Ireland, unless the cross-marked fragments be considered as such, chevrons and circular depressions being all expressive of Pagan ideas of ornamental art.

On "Bone Island," in the lake of Drumgay, were several fragments of earthen vessels. The one represented in the annexed cut, drawn half size, is a portion of what had been a large and well-formed

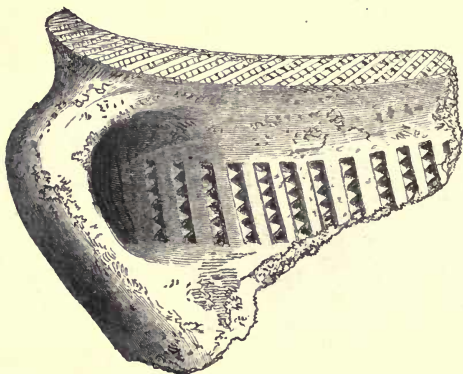


Fig. 81.—Portion of Fictile Vessel, with Ear, Drumgay Crannog. One-half size.

vessel with ears. The top of the rim is ornamented with a pattern. The diameter of the vessel at the mouth is about eleven inches; the neck is short, and the sides are decorated with indented lines about an inch in length, placed diagonally. There were also several fragments of fictile ware consisting of unimportant portions

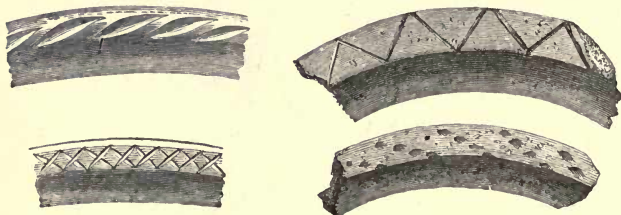


Fig. 82.—Rim Ornaments of Fictile Vessels, Drumgay Crannog. One-half size.

of rims decorated as shown in the accompanying representations.

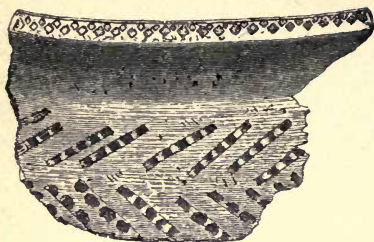


Fig. 89.—Fragment of Vessel from Lough Eyes.
One-half size.

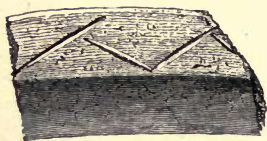


Fig. 91.—Rim of Vessel from Lough Eyes.
One-half size.

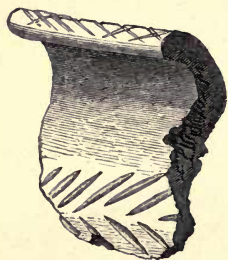


Fig. 93.—Fragment of Vessel from Lough
Eyes. One-half size.



Fig. 95.—Rim of Vessel from Lough
Eyes. One-half size.



Fig. 90.—Rim of Vessel from Lough Eyes.
One-half size.



Fig. 92.—Rim of Vessel from Lough
Eyes. One-half size.



Fig. 94.—Fragment of base of Vessel from
Lough Eyes. One-half size.

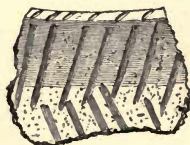


Fig. 96.—Rim of Vessel from Lough Eyes.
One-half size.

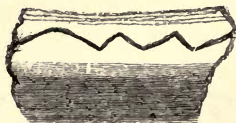


Fig. 97.—Fragment of Vessel from
Lough Eyes.

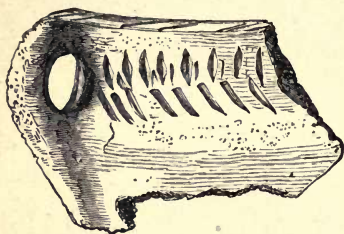


Fig. 83.—Fragment of Fictile Vessel from Lough Eyes.

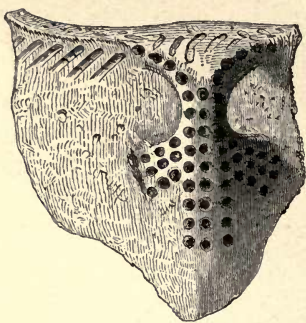


Fig. 84.—Fragment of Fictile Vessel from Lough Eyes. One-half size.

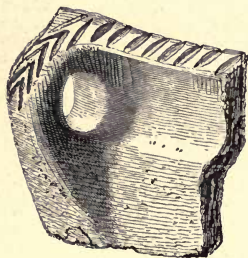


Fig. 85.—Fragment of Fictile Vessel from Lough Eyes. One-half size.



Fig. 86.—Ear of Vessel from Lough Eyes. One-half size.

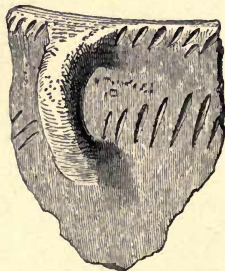


Fig. 87.—Fragment of Vessel from Lough Eyes. One-third size.



Fig. 88.—Lip of Vessel from Lough Eyes. One-half size.

One pattern is a simple chevron. The accompanying illustrations represent characteristic examples of the pottery found in abundance on No. 3 crannog in Lough Eyes, county Fermanagh (plate xviii., figs. 83 to 88).

Numerous fragments of fictile ware, of which five rims are given as specimens, were in No. 5 crannog, in the same locality (plate xix., figs. 90, 91, 92, 95, 96); and fragments were found in No. 6 crannog, of which four examples are given (plate xix., figs. 89, 93, 94, 97).

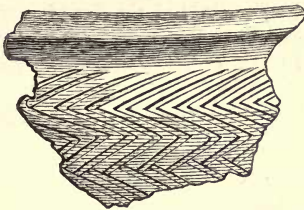


Fig. 98.—Fragment of Fictile Ware, Lough Eyes. One-half size.

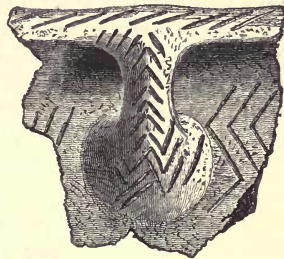


Fig. 99.—Fragment of Fictile Ware, Lough Eyes. One-half size.

Figs. 98 and 99 represent fragments of fictile ware also from Lough Eyes. Fig. 98 has evidently been a deep-lipped vessel, and its "herring-bone" ornamentation is almost identical with the pattern that prevails most upon burial urns, and closely resembles that figured upon the vessel found in "One Man's Cairn," at Moytirra, county Mayo, as represented in Wilde's *Lough Corrib*, p. 235: the same style of decoration is a characteristic of early bronze celts and other remains of the pre-historic period. Fig. 99 presents the same style of ornamentation. It was apparently an eared vessel, of reddish-drab colour.

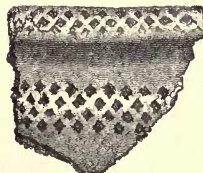


Fig. 100.

Fig. 100 has evidently formed portion of what was a well-finished vessel. So far as at present known, its style of orna-

mentation is extremely rare, being identical with that seen upon portion of a decorated leathern shoe found in the crannog of Dowalton loch, Wigtonshire, and of which a representation is given at p. 49 of Munro's *Ancient Scottish Lake Dwellings*. The fragments of vessels found in Lough Eyes were all hand-made, and well burnt, whilst the action of the fire would seem to have been greater on the interior than on the exterior. The material used was the sandy clay of the district, or perhaps the grit may have been added in order to give greater consistency to the paste. In most of the specimens there are distinct traces of this sand, and in the ruder examples particles of white stone of the size of very small peas project from the surface. The colour varies from light drab to a very dark brown, almost black, whilst some few are of a reddish hue—but all are unglazed. Many fragments of pottery have from time to time been disinterred from the site of the

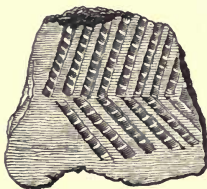


Fig. 101.—Stamped pattern on fragment of Fictile Ware from Drumskimly

crannogs in the lake of Drumskimly, county Fermanagh: one of them is figured in the *Journal Royal Hist. and Arch. Asso. of Ireland*,* in connexion with a vase evidently of Pagan origin, from the "Bar" of Fintona, near Trillick, county Tyrone.

The term "Lestar" comprises vessels of various shapes, and of all kinds of material, although it is more generally applied to those made of wood—several have been found in crannogs. In a bog, occupying what in distant ages appears to have been the site of a small lake, on the lands of Cavancarragh, county Fermanagh, implements of flint, a fine bronze spear-head, and a beautifully-shaped wooden vessel, were discovered, all buried under peat. Now, according to the theory of some geologists,

* Vol. i. (4th Series), plate II., p. 583.

a peat formation of such depth as covered them would, according to circumstances, take from six hundred to one thousand years to accumulate, so that the articles found might be referred back to any period from the thirteenth to the ninth century; and at about this latter period, it is remarked, with regard to the ornamentation observable on the wooden vessel, that a similar style prevailed in the mss. and on stone work of that era, still extant. The vessel was made of oak, the bottom alone being alder: when first exhumed it was entire, and had a cover; the original form seems to have been one of unusual beauty, and



Fig. 102.—Carved Wooden Vessel found at Cavancarragh.

the height about fifteen inches. The lid, now unfortunately lost, is described as slightly convex, with a knob-like handle in the centre, the ornamental work on it similar to that of the vessel itself. On the dark shading round the rim, and between the interlacing ornamentation, both of vessel and lid, traces were apparent of some kind of pigment, or enamel, with which the surface of the wood had been overlaid. In the crannog of Ballydoolough, county Fermanagh, a vessel of wood was discovered

in an entire state, but from long saturation reduced almost to a state of pulp. The engraving (about one-fifth the real size), gives a good idea of it. In process of drying, the vessel soon lost all shape, and became strangely twisted and distorted.



Fig. 103.—Wooden Vessel from Ballydoolough Crannog.

On comparing this woodcut with a vase found in a small stone chamber at Knocknecoura, near Bagnalstown, county Carlow, and now in the Museum, R.I.A., a striking resemblance in form is observable; the latter vessel is, however, more ornamental. To find in a grave an urn of almost exactly the same shape as a vessel undoubtedly used to hold food, suggests the idea that the so-called sepulchral urns in cairns and graves need not be viewed as necessarily intended to hold human ashes, or the cremated bones of sacrifices. Might not the object of their position have been to supply the warrior with food on his way to the Happy Hunting Grounds of Tirnanog? A willow platter, 15 inches by 14 (fig. 104), was found in the crannog of Ballinderry. It did not split much in drying, and is in a very good state of preservation: one handle, however is defective, the other is $2\frac{3}{4}$ inches in length by 4 in breadth. The dimensions of fig. 105 are as follows: extreme length from handle to handle, $31\frac{1}{2}$ inches; length inside, $25\frac{3}{4}$ inches; extreme breadth across the rim, $21\frac{1}{2}$ inches. It is not so well preserved as its confrere from Ballinderry, as it rent in drying, but has not become either warped or twisted like the great majority of wooden utensils exhumed from peat.

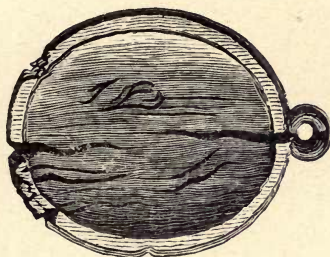


Fig. 104.—Willow Platter from the Crannog of Ballinderry, Co. Westmeath.
(Museum, R. I. A.)

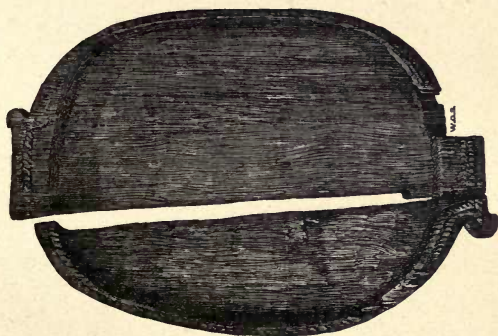


Fig. 105.—Carved Platter made of Fir, from Ballykeine Bog, Co. Antrim.

"Meadar," or "*Mether*," is the Irish designation for a species of drinking cup, so called, it is said, because it was employed to contain "mead." It seems to have been commonly made of yew, was quadrangular at the lip, and round at the bottom. It was usually provided with two or more handles for the purpose of passing it round from hand to hand. There was a curious cup of this description in one of the crannogs of Lough Rea, county Galway, too much decomposed, however, to be dug out in an entire state; and at Lagore, near Dunshaughlin, was a four-



Fig. 106.—*Mether*, or Drinking Cup, from Tamlaght O'Crilly.

sided drinking vessel, composed of horn, and very small, being only $2\frac{1}{2}$ inches in height; it resembles one discovered in the parish of Tamlaght O'Crilly, county Derry.* The use of the *Mether* appears to have been universal in Ireland, and continued to a late period, whilst judging from the great depth at which it is found buried in peat, its antiquity must be extreme. In drinking out of the *Mether*, it was not the side, but one of the four corners that should be applied to the mouth. It is related that when Lord Townsend's term of the Irish Vice-royalty had expired, he carried over to England, on his return, two large methers, which were always produced at his dinner parties. His guests generally applied the *side* of the vessel to the mouth, therefore seldom escaped without a drenched neck-cloth, vest, or doublet, and the host (after enjoying the joke), if an Irishman chanced to be present, called upon him to teach the Saxons the *methers drill*.

Dean Swift, in his translation of "O'Rourke's Noble Feast"—a poem written about 1720, in the Irish language—thus alludes to this species of drinking cup—

"Usquebaugh to our feast, in pails was brought up,
An hundred at least, and a *madder* our cup."

* *Cat. Mus. R.I.A.*, p. 265.

The object here represented (fig. 107), is a wooden mallet, 1 foot 7 inches in length, found about fifteen feet below the original surface of the crannog of Lisnacrogghera.*

Fig. 108, about 10½ inches in length, may be also a mallet, but was more probably used as a peg to keep some part of the framework in position. It rested on one of the beams of the western crannog in Glencar, county Sligo.



Fig. 108.
Wooden Peg
from Glencar.

The ms. Book of Ballymote contains an ancient Irish poem, which states "It was Tigearnmas first established in Ireland the art of dyeing cloth of purple, and many colours." This monarch is alleged to have lived, A.M. 2816(?), therefore in Ireland the arts of weaving and dyeing are of remotest antiquity. Some bright red colouring matter (realgar[†]), rolled up in a piece of birch bark, was discovered in one of the crannogs of Loughrea, county Galway; † orpiment, a yellow sulphuret, probably used in dyeing, was found in Cloneygonnell; ‡ and, whorls, or little discs, popularly called by the peasantry "fairy mill-stones," are found in great numbers, of these fig. 109 is a good example. The whorl was supposed to be simply a weight, used to



Fig. 109.
Bone Spindle Whorl
from Ardakillen.



Fig. 107.
Wooden Mallet from
Lisnacrogghera.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), p. 391.—W. F. Wakeman.

† *Proceedings, R.I.A.*, vol. viii., p. 329.

‡ Several soft lumps of what appeared to be a blue and a red pigment were discovered in the crannog of Lochlee, in Ayrshire, though the latter specimen shortly after turned blue; whilst at Lochspouts were found two pieces of colouring matter, the one red and the other black; and at Holderness, in Yorkshire, "red ochre" was picked up on the site of a lake dwelling.—*Ancient Scottish Lake Dwellings*, pp. 139, 160, 300.

aid the rotation of the stick fixed to a ring on the spindle: it can be seen in Egyptian, Greek, and Roman sculptures, and wall paintings, and Schliemann in his excavations at Hissarlik found thousands of these objects. It has been suggested that a curious ovoid piece of hard polished bone, found at Ardakillen, may have been utilised in weaving, for the purpose of keeping the threads, or cords in their proper places; its longest diameter was $2\frac{1}{2}$ inches, and it was perforated with ten holes of slightly different sizes.* Investigation has led to the belief that flax was cultivated in Egypt more than forty centuries ago, and was thence brought into Europe; it was discovered in the oldest lake dwellings in Switzerland, of the kind which is native to the Mediterranean countries; the term *lin*—the root of the English word *linen*,—is to be traced in nearly every European language: in spoken Irish it is *leen*, i.e. flax. The art of spinning, being of a sedentary nature, was exclusively allotted to women, which is supposed to explain the fact of such a number of whorls being found on the site of crannogs, where this peaceful occupation was carried on. In the present day, the province of Ulster seems to have monopolized an industry that may be traced back to the primitive inhabitants of the lake dwellings of Ireland.



Fig. 110.
Ovoid piece of polished Bone
from Ardakillen.

Articles of the Toilet, etc., or of Personal Adornment.—In crannogs, pins form one of the most numerous handicraft “finds;” they are fashioned of bone, wood, bronze, iron, and gold: great variety is observable in their shape and design: indeed there are few articles on which the crannog artificer has bestowed more pains than on these cloak or dress fasteners. At Lagore, pins of bone occurred absolutely in hundreds—the great majority were of very plain character, something like skewers—flat-headed, and perforated with one hole; some of the richer examples were singular in design—their heads presenting grotesque human figures, or carvings of beasts; a few of them terminated in plain bulbs, or in a series of graceful mouldings: but whether in bone, wood, or metal, the designs and style of ornamentation are very varied, and so minute in some instances is the decora-

* *Cat. Mus., R. I. A.*, p. 303.

tion, as only fully to be described by the aid of a magnifying glass. Fig. 111, of simple form, is here represented full size; it is ornamented with diagonal lines; the head is perforated, but the ring (if it ever contained one) has disappeared. Fig. 112, found at Grosses Island, on the Shannon, is large, and dark in

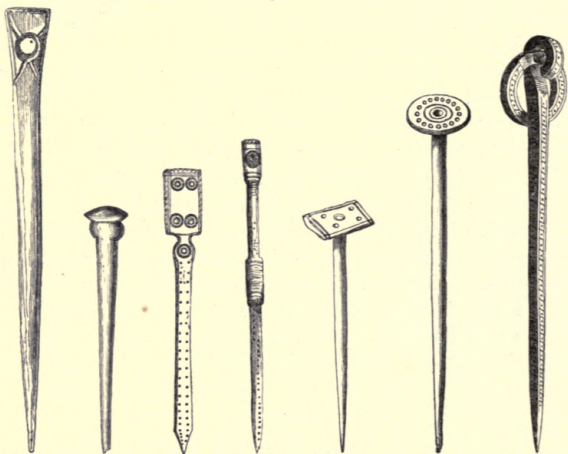


Fig. 111. Fig. 112. Fig. 113. Fig. 114. Fig. 115. Fig. 116. Fig. 117.

Figs. 115, 116, and 117 are Bone Pins with attached Heads, from the Crannog of Ballinderry.

colour, it is 9 inches long, and $2\frac{1}{2}$ inches thick at the head: it seems too large to be classed as a mantle pin. Fig. 113 is of less simple outline. The shank of fig. 114 is formed like a knife-blade, with a rise near the top, probably intended as a catch to secure it in the garment which it fastened. Fig. 115 is $3\frac{1}{2}$ inches long, and has an oblong head of bone, with four indentations, one in each corner; it rests upon a shoulder cut in the shank. Fig. 116, $4\frac{1}{2}$ inches in length, has a circular head 1 inch in diameter. Fig. 117 is another highly decorated pin, square in the shank, and $5\frac{1}{2}$ inches long, with a looped head, through which is passed a ring. Fig. 118 (plate XXI.) has an acus $4\frac{1}{4}$ inches long, ornamented with the "dot-and-circle," and the

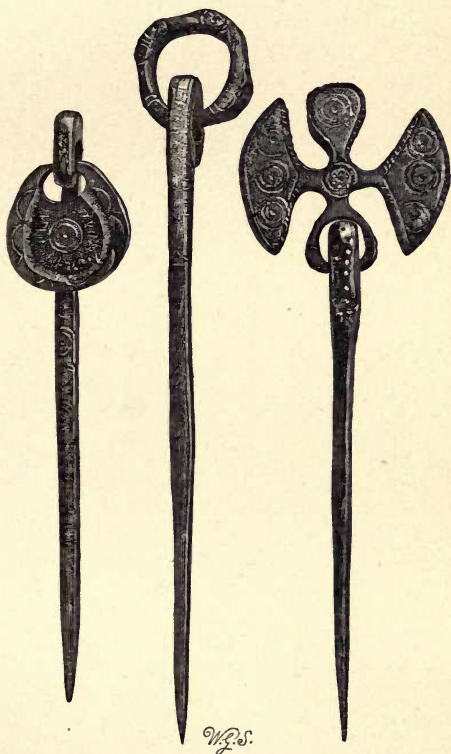


Fig. 118.

Fig. 119.

Fig. 120.

Scribed Pins from Ballinderry Crannog.

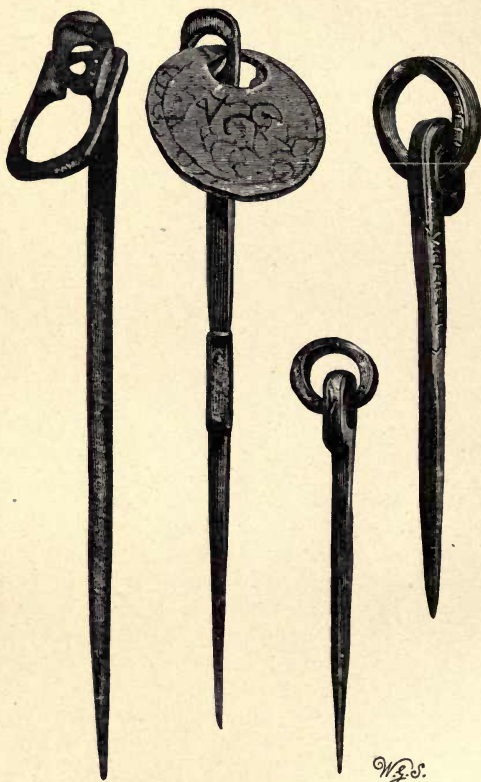


Fig. 121.

Fig. 122.

Fig. 123.

Fig. 124.

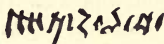
Scribed Pins from Ballinderry Crannog.

front of its flat discoid pendant has an inscription of oghamic character surrounding a dot and double circle, enclosed within an ornamented border—

III IIII II II III IIII I | II IV II

Ogham on fig. 118.

The loop at the head is not continuous. In fig. 119 (plate XXI.) the acus is $4\frac{1}{2}$ inches long, with an irregular oval ring as pendant, ornamented with the dot-and-circle. The acus has a swelling in the middle, which at one side has the dot-and-circle, and on the other a runic-like scoring—



Scoring on fig. 119.

Fig. 120 (plate XXI.) has an acus $3\frac{3}{4}$ inches long, it bears a pendant carved in the shape of a Maltese cross, ornamented on both sides with the dot-and-circle. The acus has an ogham-like scoring on one face—

| IIII (worn) II IIII || XI

Scoring on fig. 120.

In fig. 121 (plate XXII.) the acus is $7\frac{5}{8}$ inches long, flattish, and ornamented by cross notchings, which seem merely ornamental, although at one side the character N is repeated many times; the pendant is somewhat rectangular in form, and perforated with a round opening—its rim ornamented with dots and lines. Fig. 122 (plate XXII.) is a pin $5\frac{3}{8}$ inches long, with a large flat pendant, rudely and irregularly decorated in front. The acus has no ornament, but about its centre there is a square enlargement to keep it firm when inserted in the dress, and this projection has ogham-like scribings on three of its faces. Fig. 123 (plate XXII.) has an acus 3 inches long, with a small circle as a pendant, ornamented with dots; one side of the acus has a herring-bone pattern, the other bears scores—

II X

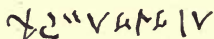
Scoring on fig. 123.

Fig. 124 has the acus $3\frac{1}{2}$ inches long, and a circular ring for pendant; the ring has scoring on one face—

IIII VX || NIAI| || || V || V || N || N ||

Scoring on ring of fig. 124.

One side of the acus is ornamented with the dot-and-circle; on the other (shown in the cut) is a runic-like scoring—



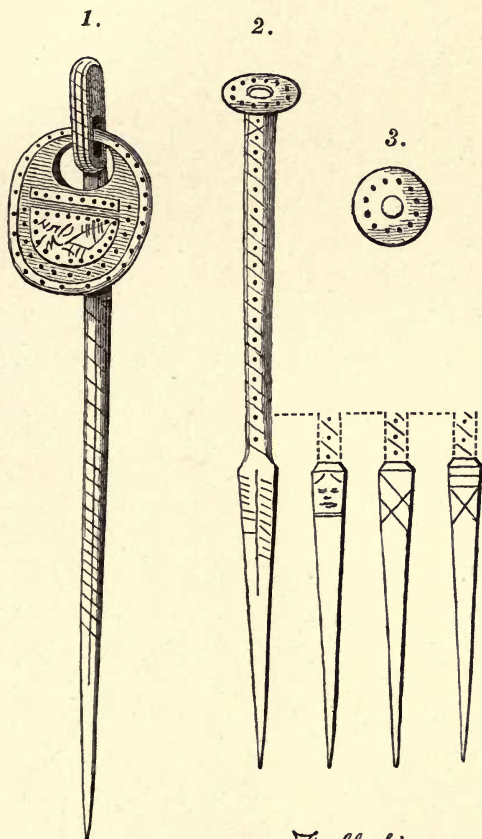
Scoring on acus, fig. 124.

There are cracks, or openings, in the rings at the head of each acus, by means of which the pendants may have been introduced; but these cracks are possibly the result of wear or straining, and it may be that both pendant and acus were originally carved out of one piece, like Chinese chains of ivory rings. From the same "find" came a pin with acus $4\frac{3}{4}$ inches long, having a flat discoid pendant of considerable size, both acus and pendant ornamented with the dot-and-circle; also a plain bone pin $2\frac{1}{4}$ inches long, with a hole at the head for a wire ring; another plain bone pin 3 inches long, with a flat head unpierced for ring or pendant; and a pin of yew, $2\frac{1}{4}$ inches long, with a round head.*

The scorings on these pins, though mostly mere ornament, seem in some cases greatly to resemble Ogham and runic characters, but Professor Stephens, of Copenhagen, to whom photographs of the runic-like scribings were submitted, could not decide that they were actually runes; and again, other examples of bone pins from Ballinderry, preserved in the Museum, R. I. A., bear seemingly well-marked Ogham scorings, yet Professor Rhys and Sir Samuel Ferguson were unable to interpret them.† The pin given, plate XXIII., fig. 1 (full size), bears ogham-like scorings on the front of its disc, no doubt originally intended to convey a meaning, but up to the present no key has been discovered by which they can be read; it is possible they were intended as a charm of some kind. Fig. 2 (plate XXIII.) was not in the Academy when Wilde compiled his catalogue: the head of this pin is of stone, said to be agate, secured to the bone stem, seemingly, by a small wedge of bronze. Near its termination, the pin assumes an acutely quadrangular form, each face bearing an ogham-like set of scorings; these may possibly also have been talismans. Pins of bone, as well as of bronze, have been fre-

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), pp. 198–202.—Rev. James Graves.

† *Ibid.*, pp. 198–202.—Rev. James Graves.



Full Size.

W.F. Wakeman

Scribed Pins from the Crannog of Ballinderry.

quently found with rings of that metal attached to them, of a more or less ornamental type, but sometimes consisting of a mere piece of wire.

Fig. 125, from Lisnacrogghera, represents a rude ring of this nature ; and quite recently a bronze



Fig. 125.—Bronze Wire Ring from Lisnacrogghera. Full size.

pin, with similar attachment, was picked up from the bed of Drumcliff river, county Sligo. A pin of unusual form, and ornamented with two human heads, fig. 126, was brought to light in the crannog of Loughravel ; the material is dark-coloured bronze, cast in the required form, but finished off with a chasing tool. In fig. 127 the ring, with which

most pins are decorated, assumes the form of a coin, or flattened disc with a notch at top to allow it free play in the loop. In some specimens the disc of the coin is smooth and plain, but in others, as that here represented, it is highly ornate. Fig. 128 shows a rude plain specimen of the penannular pin, decorated in the inferior enlargements.* Fig. 129 from Lagore, has



Fig. 126.

Bronze Pin, with human heads, found in the Crannog of Loughravel. Full size.

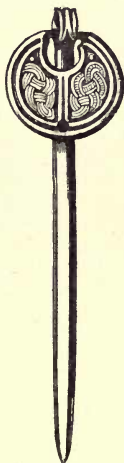


Fig. 127.

Flattened disc-headed Pin from Ballinderry. Full size.

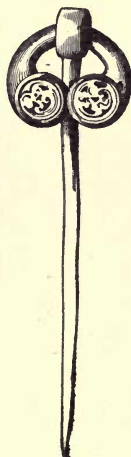


Fig. 128.

Penannular Bronze Pin from Lagore. Full size.

a head of singular fashion, and the bronze ornament claims

* W. F. Wakeman states that fig. 127 came from Ballinderry Crannog; and, fig. 128 from Lagore; in the *Cat. Mus., R.I.A.*, they appear as Nos. 302 and 326.

special notice "on account of the analogy of type which it presents as compared with the remarkable silver pins found at



Fig. 129.

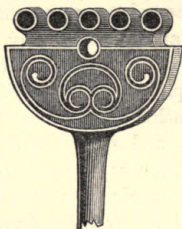


Fig. 130.

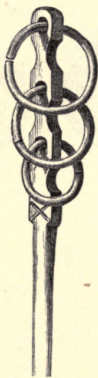


Fig. 131.

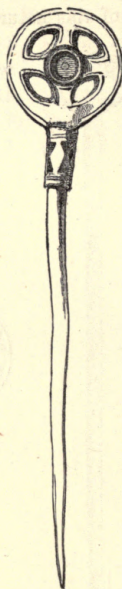
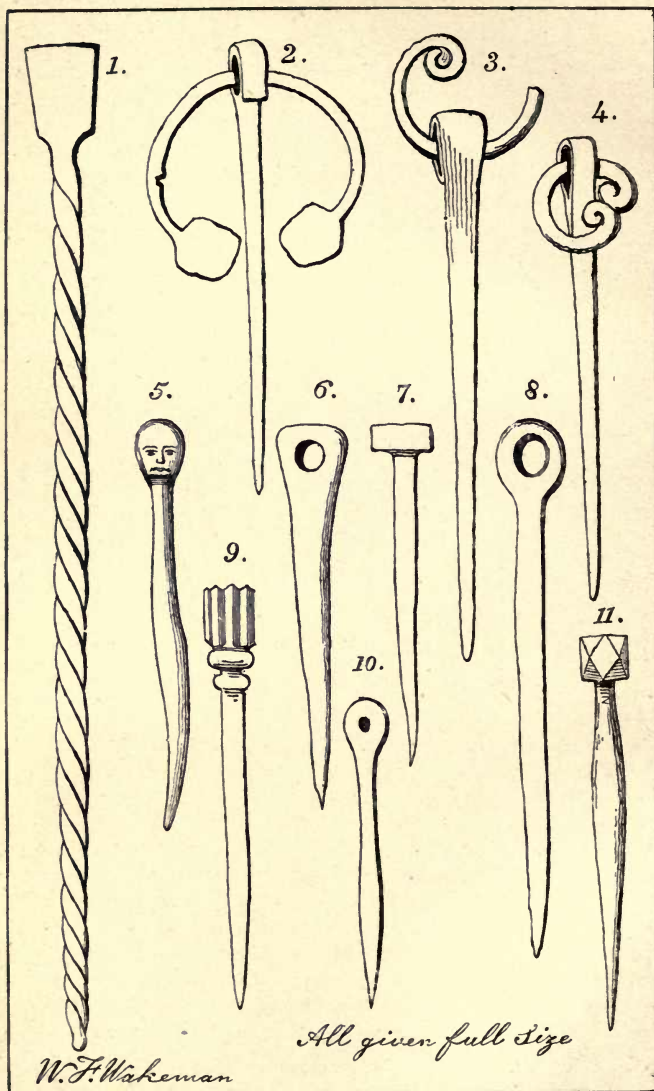


Fig. 132.

Largo, in Fifeshire," and with the "Hammer-headed pins" in the Museum, R.I.A. Fig. 130,* of similar form, is ornamented on its semi-circular plate; the ground had originally been filled in with enamel, as were probably the front terminations of the tubes. It was found near a crannog in Craigyarren bog, parish of Skerry, county Antrim. Fig. 131, from Lagore, is unique; its entire length is 3 inches, and it has three rings passing through

* Now in the British Museum.



Iron and Bone Pins from Lagore.

apertures in the elongated head, which is the only part here represented; its inferior extremity is decorated with a cross-like ornamentation.* Fig. 132, from Ballinderry, is a plain pin, with a wheel-like head, having a small hole in the neck, through which a ring passed.† Crannogs and street cuttings are the principal localities from which the small pins, figs. *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h* have

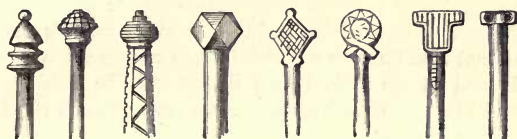


Fig. *a*. Fig. *b*. Fig. *c*. Fig. *d*. Fig. *e*. Fig. *f*. Fig. *g*. Fig. *h*.

been procured, they vary in length from $2\frac{1}{4}$ to $7\frac{1}{2}$ inches; fig. *d* is from Ardakillen.‡ All the articles figured in plate XXIV. were found at Lagore, and now form part of the Petrie Collection in the Museum, R.I.A. Nos. 1, 2, 3, and 4 are of iron, of which material very few ornamental objects have been found in Irish crannogs. No. 1 is remarkable as presenting a fine example of the torque pattern. Nos. 2, 3, and 4, in form strongly resemble brooch pins of bronze, which there is every reason to believe belong to an extremely remote period. The bone pins, Nos. 5, 6, 7, 8, 9, 10, and 11, are faithful representations of the leading varieties of that article, as found in Irish lake dwellings, and indeed in some pagan tombs. Nos. 1, 2, 3, 4, 5, and 6 (plate xxv.), are believed to represent wooden pins for the hair. No. 1 remains in a perfect state: the mouldings upon its lower and thinner end were doubtless intended to keep the article in its proper place, and prevent its slipping from the "back hair" of some long-forgotten beauty. No. 2 is unfortunately imperfect, but it is of interest on account of the boldness of the mouldings by which its head is decorated. No. 3 is perhaps the most remarkable pin composed of wood which has been recorded as found in a crannog: its decoration consists chiefly of varieties of the divergent spiral, highly characteristic of early Celtic art. No. 4 may possibly have been a hair-pin, but it was more probably used as a bodkin. Nos. 5

* *Cat. Mus. R.I.A.*, p. 560.

† *Ibid.*, p. 559.

‡ *Ibid.*, p. 556.

and 6, with serrated edges, seem well designed for the purpose of securing the hair in position. Pins of this kind were probably used in pairs, attached together with a string. No. 7 is a nondescript piece of wood, with two perforations; and No. 8 represents a handle, probably belonging to a very small wooden vessel. No. 9, shaped like one half of a wheel, is cut out of the solid, and appears to have been very carefully worked. It is almost impossible to form an opinion as to the character of this object: possibly it may have formed portion of the head of a cross: if so, it is the only relic of that kind hitherto reported to have occurred in a crannog. Nos. 10 and 11 are noticed by Wilde as seal-like articles. The former of these is solid; but the latter, from its thicker end to the moulding, is hollow.*

Shears composed of iron, and doubtless used for all the purposes of modern scissors, are common in Irish crannogs. Some from Lagore are of graceful form, resembling articles of the same class



Fig. 133.



Fig. 134.



Fig. 135.



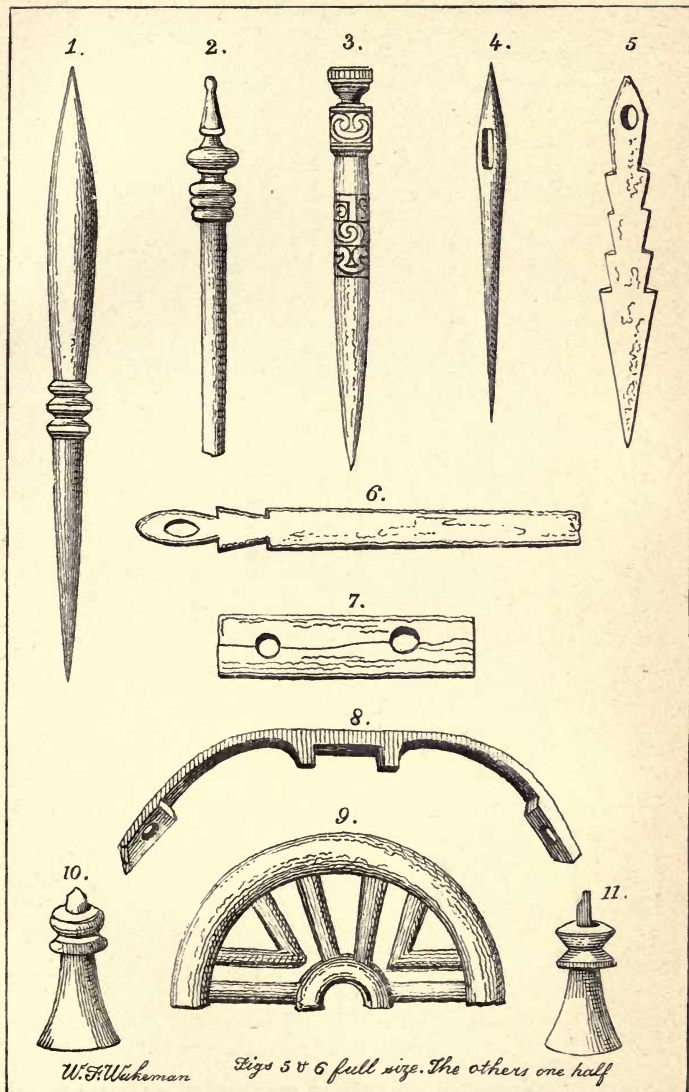
Fig. 136.



Fig. 137.

found in Roman settlements: the one represented, fig. 133, is of very large size, $8\frac{1}{2}$ inches in length. Figs. 134 and 135 differ but little from fig. 133, and they all resemble the implements commonly used for shearing sheep in the present day. Figs. 136 and 137 are small

* Nos. 1, 2, 3, and 4 are from Lagore; the remainder were discovered in crannogs, but the exact sites not now known. Wilde alludes to Nos. 10 and 11 "as conical bits of carved wood, like chessmen. The former, however, is hollowed at the base, as if for the insertion of a stamp, and the latter is carved upon the face of the base, with a device not unlike a seal: each is $2\frac{1}{2}$ inches high."



iron knives, with tangs for insertion into horn or wooden handles; at Lagore, where these articles were found, great numbers of blades, some not exceeding three inches in length, were discovered.

Of combs, the most numerous specimens are from the crannogs of Ardakillen, Ballinderry, Lagore, and Cloonfinlough: in some, brass teeth have been substituted for those of bone that had given way, showing that, at the time the repairs were made, that metal was easily procured and worked. Strangely enough, the most usual decoration consists of a series of dot-and-circle patterns. The same style of ornamentation was observed upon many of the combs found in the lake habitations of Switzerland, and amongst the waifs of Roman settlements in Britain. In the remains of such articles, in Irish and in Scottish lacustrine sites, there is a striking resemblance; indeed the bone combs, figured in Munro's work, are identical with many existing Irish examples. Although the material is usually bone, yet specimens formed of wood are not uncommon: the great majority of combs discovered in Irish crannogs are highly artistic in design—the handle portion sometimes presenting animal forms. Sir John Lubbock says: "It is somewhat remarkable that, while even in the stone period we find fair drawings of animals, yet in the latter part of the stone age, and throughout that of the bronze, they are almost entirely wanting, and the ornamentation is confined to various combinations of straight and curved lines and geometrical patterns;" and this he

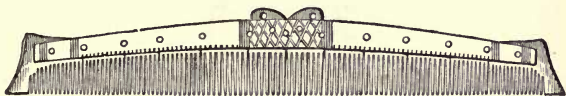


Fig. 138.—Bone Comb from Ardakillen.

believes will eventually be found to imply "a difference of race between the populations of Western Europe at these different periods."* The comb, fig. 138, was procured from the crannog of Ardakillen, near Strokestown, county Roscommon. It is restored from the fragments, and in its original state was (as delineated) about 10 inches long, and $1\frac{3}{4}$ wide, it is now shrunk to a length of only $5\frac{1}{2}$ inches. The toothed portions are in separate pieces, and by this contrivance the pectinated portion, if worn or broken,

* *The Origin of Civilization*, p. 38.

could easily be replaced. The comb, fig. 139, is the finest specimen of its class preserved in the Museum, R. I. A., it is

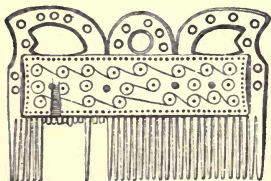


Fig. 139.—Bone Comb from Ballinderry.



Fig. 140.—Bone Comb from Lagore.

$2\frac{1}{2}$ inches long, and $1\frac{3}{4}$ deep. The three pectinated portions are held together by flat sides, decorated with scrolls and circles. The top shows a triple openwork ornamentation: the side pieces are grooved at one end, for the purpose of receiving the clasp of a metal tooth placed in substitution of one that had been lost. Fig. 140, of the same class, is a specimen of a short, one-sided, highly decorated comb, $2\frac{1}{4}$ inches long, by $1\frac{3}{8}$ deep. It is formed out of a single piece of bone, is of graceful outline, and decorated upon the sides with a number of dotted lines and circles. The three elevated rivets projecting above the toothed portion, fastened metal plates which had been attached to the comb, either when it was originally made, or after it had been broken and mended.*

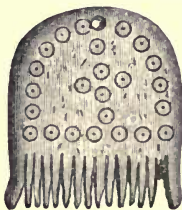


Fig. 141.—Bone Comb from Lagore. Two-thirds real size.

Fig. 141 is also formed out of a single piece of bone, ornamented with a dot-and-circle pattern; it was found in the same crannog. A third variety of comb, being double-toothed, is of a type so modern, that it seems to call for no special description.

* *Cat. Mus., R. I. A.*, pp. 271-2.

Save combs, very few articles for the toilet have been brought to light in Irish crannogs, compared with the numbers found in other countries: the accompanying engraving represents, however, what appears to be tweezers, 3 inches long, made of bronze, and decorated on the external surfaces with dot-and-circle pattern.* This, and the two following articles, are from Ballinderry. Fig. 143, a pendant or amulet, ornamented with dots in circles (as represented in the engraving), is carved out of soft stone, and the inscription which it bore is so much defaced as to be now undefinable. It is 3 inches long, including the handle, or loop, for suspension, $1\frac{1}{2}$ inch wide, and about $\frac{5}{8}$ inch thick. The inscription



Fig. 142.
Bronze Tweezers
from Ballin-
derry.



Fig. 143.—Stone Pendant Amulet from
Ballinderry Crannog.

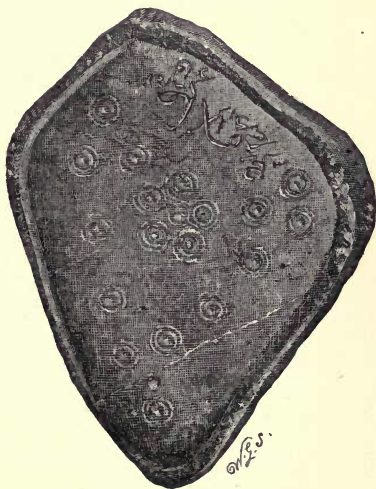
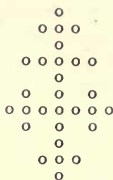


Fig. 144.—Nodule of Clay-slate from
Ballinderry Crannog.

is at top, separated by a line from the ornamentation in the central part: the back is plain. Fig. 144 is a flattish nodule of clay-slate

* *Cat. Mus., R.I.A.*, p. 549.

iron ore: at one side, dots, each with two concentric circles in the shape of a double cross, scribed on it, surrounded by a border of similar ornamentation; on the other face, there are a number of the same circles, irregularly disposed (as shown in fig. 144), and, at one side of it, a runic-like scribing. The stone measures 3 inches by $2\frac{1}{2}$, and is about $1\frac{1}{2}$ inches thick. It is, to a certain extent, polished.*



Ornamentation on fig. 144.

Fig. 145, found in the crannog of Lisnacrogghera is a small bronze object, considered by W. F. Wakeman to have been an

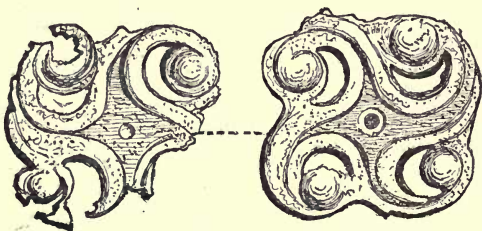


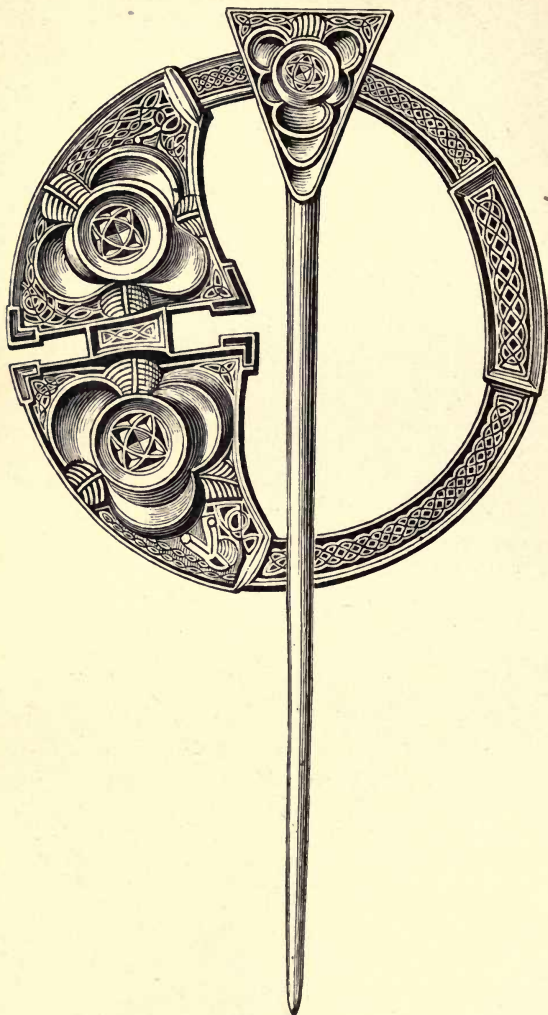
Fig. 145.—Bronze Amulet, or Ornament, from Lisnacrogghera.

amulet: "the figures which it bears are curvilinear examples of a symbol known to antiquarians as the swastica. There can be little or no question as to the eastern origin of this form of cross."†

From the tenacity with which craftsmen adhered to ancient designs or patterns, it is difficult to assign even an approximate date to many remains of articles suitable for personal decoration; however, any brooch, pin, or other object, upon which interlacing tracery is displayed, should not be referred to a period antecedent to the introduction of Christianity into Ireland.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), pp 197-8.—Rev. James Graves.

† *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), pp. 389-391.—W. F. Wakeman.



Bronze Brooch from Lagore.

Of bronze articles connected with personal adornment, few can equal in design and workmanship the hinge brooch from Ardakillen, here represented; it is considered to be of great antiquity.

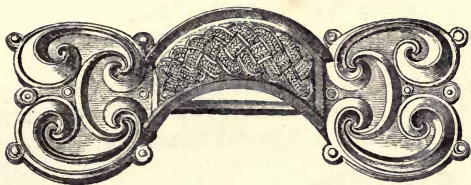


Fig. 146.—Hinge Brooch of Bronze from Ardakillen.

The decoration on the enlarged ends partakes of the "Celtic trumpet pattern," while the central connecting curved strap, with a raised intertwinement, like that seen on some sculptured crosses, and in the illumination of ancient mss., would appear to have been cast. The thin ornamented plate in front is fastened by eight rivets to a stout flat plate behind, which also overlaps the edges of the strap; its flat pin is hinged at the back.* The very remarkable brooch, represented full size, plate xxvi., was obtained by Petrie† soon after the first opening of the Lagore crannog. The original discoverer stated that it was enclosed in an ancient case or box of yew—this has unfortunately been lost. The material of which the brooch is composed, is fine golden-coloured bronze, so lustrous that, in places which have been rubbed or exposed to friction, it is difficult to decide whether the article had not been originally gilt. The pin is $6\frac{1}{8}$ inches in length: the diameter of the ring $3\frac{1}{8}$ inches. The deeply set compartments, or panels, some thirteen in number, into which the ring is divided, contain ornamentation in what is generally designated the Celtic style: these designs, various in character and admirably executed, remain as sharp as when originally made. It is decorated on the front only. The ring, as is usual, expands on one of its sides, so as to fill up nearly one-half of the circle. The head of the acus is secured to the ring by a boldly projecting loop. The thickness of the plate forming the ring is about a quarter of an inch; the edges are plain.

* *Cat. Mus., R.I.A.*, p. 568.

† Petrie Collection, *Mus., R.I.A.*, No. 157.

Another bronze brooch,* in use amongst the crannog dwellers of Lagore, is smaller than that shown on plate xxvi. The ring measures but 2 inches in diameter; the head of the acus contains a series of circular concentric mouldings, the intermediate spaces being deeply sunk; in the centre is a cavity which formerly contained a setting. The ring is continuous, and one of its sides expands, exhibiting circles (similar to those ornamenting the head of the pin), in one of which a fine setting of amber still remains; the other is now empty. There is no trace of enamel having been used on this brooch. A beautiful bronze fibula, or brooch, found

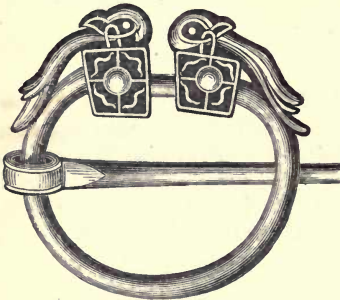


Fig. 147.—Bronze Fibula from Lough Ravel.

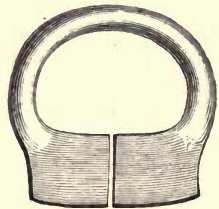


Fig. 148.—Penannular Ring, or Brooch, from Lough Ravel.

on the site of the crannog of Lough Ravel, is here reproduced (full size), from the engraving in the late *Ulster Journal of Archæology*. This brooch, and one of silver from the same locality, are distinguished by their peculiar bird-head ornamentation on the superior extremity. From the same crannog came the penannular ring or brooch (fig. 148); and, from Ardakillen, a small penannular ring (fig. 149), of most curious torque pattern; indeed, penannular rings of bronze, of various sizes, sometimes highly decorated in very primitive style, are of not unfrequent occurrence in Ireland: they are supposed by some writers to have been used as a kind of money; others have pronounced them to be finger-rings, or bracelets,



Fig. 149.
Penannular Ring from
Ardakillen. Two-thirds
real size.

* Petrie Collection, *Mus., R.I.A.*, No. 156.

according to their size ; similar objects are met with in gold, and, like their bronze prototypes, have greatly puzzled the learned in antiquarian matters. At the crannog of Lisnacrogghera were found two penannular rings, formed of very thin, golden-

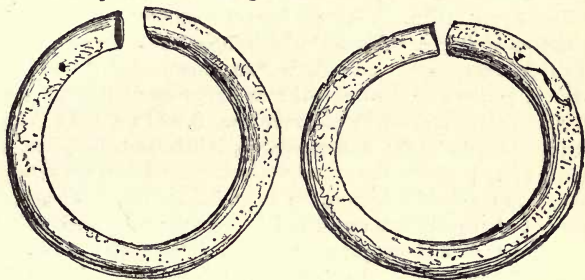


Fig. 150.—Hollow Bronze Penannular Rings from Lisnacrogghera.

coloured bronze. They are hollow, and consequently extremely light, so that they could scarcely have served as money: and the smallness of their diameter, which is only $1\frac{3}{8}$ inches, shows that they could not have been bracelets. The following articles are also from Lisnacrogghera. Fig. 151, a bronze stud—use problematical. Fig. 152, a plain bronze rivet. The circlets of bronze, figs. 153, 154, 155, may have been either the rings of brooches or pins, or perhaps buckles which had lost their tongues. Fig. 155 still retains traces of red enamel in its chevron, or wavy ornamentation.*



Fig. 151.—Bronze Stud.



Fig. 152.—Bronze Rivet.



Fig. 153.

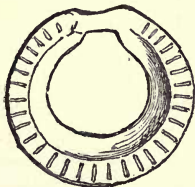


Fig. 154.
Bronze Circlets.



Fig. 155.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), p. 386.—W. F. Wakeman.

Touchstones would appear, from their make, to have been worn about the person, several being pierced with a hole, seemingly for attachment of a string. Sir W. Wilde remarks that they have been found both flat and four-sided, and with and without perforation. They are formed generally of black Lydian stone or of jasper, either material being suitable for gold-testing. Lydian stone, or black chert, is "an impure flint, found in the central portions of the carboniferous limestone of Ireland, and at the base of the Kilkenny coal formation. It is of a dull dark colour, approaching to black; is more opaque, brittle, and stone-like, than flint; never possesses the same translucency, and does not so readily chip into conchoidal fragments; but, next to flint, it is one of the hardest of the siliceous rocks, and hence was used occasionally for forming tools and weapons by the inhabitants of those districts where flint was rare. Lydian stone, 'Lapis Lydius,' or, 'Lapis Hibernicus,' as it was denominated by the old Dutch writer De Boot, so long ago as 1647, is the true touchstone of the ancients."

Few ornaments of silver, and still fewer of gold, have been brought to light in crannogs, the antiquities of which consist mainly of the more homely class of bone, bronze, and iron articles for personal adornment; yet numerous gold ornaments have doubtless been discovered, but remained unrecorded, from fear of detection on the part of the finder, before the Treasury Minute respecting "Treasure Trove" came into operation. Antique articles of gold have been turned up in the bogs of Ireland, and in various parts of the country. Is it likely that the inhabitants of "island fortresses" should alone be devoid of the precious metal, especially as in them have been found both small earthen crucibles—so diminutive as to have been useful only for gold or silver smelting,—and also small pipe-clay cupels for refining purposes, like those used in the present day for the assay of gold and silver? Fig. 156 represents a pipe-clay crucible from the crannog of Lagore, 2 inches broad, and 1 inch high. A well authenticated instance of the discovery of the precious metal in a crannog, was that of "several gold pins," at Loughtamand, county Antrim;* and, in the autumn of 1870, a beautiful, almost



Fig. 156.
Pipe-clay Crucible.

* *Proceedings, R.I.A.*, vol. vii., pp. 155-6.—Reeves.

unique, specimen of early Irish art came to light on the site of the former lake dwelling of Lough Ravel, county Antrim. The accompanying woodcut is the size of the original. This silver brooch, or fibula, represents two bird-headed serpents joined together: both sides of the ornament are alike; the silver is slightly thinner than a shilling piece; the pin is missing. In the design there seems to be a resemblance to some of the initial letters in the "Book of Kells," and other early Irish mss., so that its probable age is not later than the tenth century.*

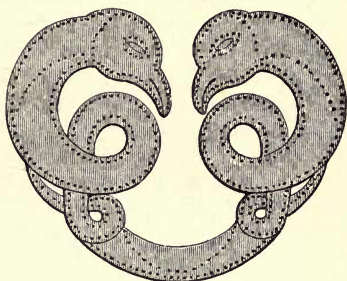


Fig. 157.—Silver Brooch from the Crannog of Lough Ravel.

Figs. 158 and 159 are good examples of stone rings, the former

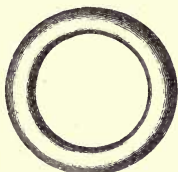


Fig. 158.—Stone Ring. One-third size.



Fig. 159.—Stone Ring. One-half size.

2½ inches in the clear; the latter, 2¾ inches. Fig. 160, drawn



Fig. 160.
Jet Bracelet, or Ring.
One-quarter size.

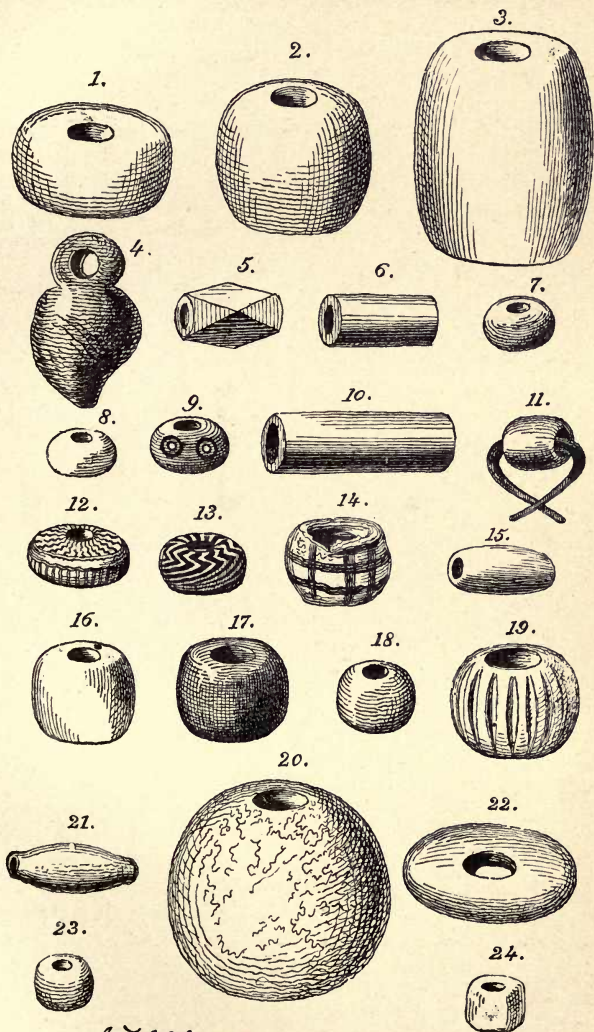


Fig. 161.
Glass Bracelet, or Ring.
One-third size.

one-fourth the real size, is a bracelet of jet, from Lough Eyes, restored from the fragments; and fig. 161, restored from existing remains in the Museum, R.I.A., is of blue-coloured glass, decorated with spots and a cable pattern.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. (4th Series), p. 74.—W. H. Patterson.

Beads of stone, bone, jet, earthenware, and wood, occur in crannogs; also beads of amber, of which many are in modern use amongst the peasantry as prayer-beads. O'Flaherty, in his *Iar Connaught*, states that amber was procured in more or less quantities on the coast of Galway. Ornaments of glass, from the most simple and unpretending plain blue bead to that studded with settings of enamel or vitreous paste, so varied in colour and of so much beauty in outline that they might be worn at the present day, are still met with in crannogs, as well as in pagan sepulchres. Blue appears to have been the favourite colour, but some are pale green, white, yellow and red, with spirals and decorations of varied colours; whilst others have a dark groundwork, and are studded with fragments of red, green, yellow, blue and white enamel. All the beads figured in plate XXVII. are drawn full size. No. 1, formed of stone, presents an average specimen of its class. No. 2 is from Lagore, where a considerable number, but of smaller size, occurred. No. 3, composed of bone, is probably the largest bead of that material found in any crannog: usually, they are scarcely the size of an ordinary pea. No. 4 is a pendant of black opaque glass; it probably formed the centre of a necklace. One resembling it, but composed of stone, may be seen in the Petrie Collection, R.I.A. No. 5 is a small bead of blue glass; its form is one of rare occurrence. No. 6, of plain cylindrical outline, was accompanied by several others of the same class: in colour it is a dull green. No. 7, a small globular bead of glass: colour deep blue; and No. 8, of similar shape, is composed of opaque white glass, or porcelain. No. 9 is a beautiful bead of green glass, presenting in dark-blue the dot-and-circle pattern; the spaces between the dots and their surrounding circles are pure white, so that a very pleasing effect is produced. No. 10 is an unusually long bead, of material similar to No. 6. No. 11 is a curious bead, through which passed a piece of bronze wire, which probably formed the loop of a pin. No. 12 is formed of dark-green glass, relieved by yellow ornamentation, as shown in the representation; and No. 13 is of dark-blue opaque glass, or paste, with chevrons of white glass, or enamel, passing round it. No. 14 is formed of white glass, or porcelain, ornamented with a pattern in black, and the opening for the string unusually large. No. 15 is composed of very light-coloured blue glass; and No. 16 of pure crystal. No. 17, formed of jet, was accompanied by



W.F. Wakeman
1884.

Beads, composed of various materials, from Ardakillen, Lagore, Ballinderry, Drumdarragh, Cloonfinlough, and Lough Eyes.

fragments of bracelets of the same material. No. 18, apparently formed of fine clay, its colour what artists call Venetian red, is in the Petrie Collection. No. 19 is, undoubtedly, most curious, not on account of its form or design, which is common, but in regard to its being made of lead—perhaps the only example of a bead of that material discovered in Irish crannogs. No. 20 is a fine specimen of the amber bead, so often discovered in connexion with very early remains. No. 22 is also an amber bead, of rather unusual form, being almost flat, like a wheel. Nos. 23 and 24 were picked up by W. F. Wakeman, from the shores of one of the crannogs of Lough Eyes, but at a time subsequent to the publication of his Paper on that locality.* The collection of glass and enamel beads in the Museum, R.I.A.,



Fig. 162.
Bead from Lagore.



Fig. 163.
Bead from Lagore.



Fig. 164.
Bead from Lagore.

contains one of long cylindrical form, composed of blue, white, and yellow enamel; it is $\frac{3}{4}$ of an inch long, is decorated with a blue and white band round each extremity, and has yellow spots on the centre: it is of the same character as No. 41, represented by fig. 162. No. 21, one of the most beautiful beads in the collection, fig. 163, measures half an inch in the longest diameter, and is composed of clear glass, with bright yellow spirals of opaque enamel covering its sides. No. 27, represented by fig. 164, is an opaque bead of glass, light-green in colour: the aperture is rather large, so that it may have been used as a necklace, or pin-bead; it is grooved in melon-form. Two beads, composed of green glazed-ware, and also of melon-shape, may be seen figured at page 178, in Munro's *Scottish Lake Dwellings*. Nos. 20, 21, and 27, Museum, R. I. A., are from the crannog of Lagore.

* Nos. 1, 3, 20, 21, are from Ardakillen. Nos. 2, 11, 12, 13, 15, 18, from Lagore. Nos. 5, 6, 7, 8, 9, 10, 14, 16, from Ballinderry. No. 17, from Drumdarragh. No. 22, from Cloonfinlough. Nos. 23, 24, from Lough Eyes.

The three following beads here described are from the crannog of Lisnacrogghera. Fig. 165, of opaque blue glass, very dark in



Fig. 165.



Fig. 166.



Fig. 167.

Beads from Lisnacrogghera.

colour, but relieved with white streaks of the same material, crossing each other obliquely. Fig. 166, of ordinary blue glass, quite plain; and, fig. 167, an elongated cylindrical bead of amber.* In Wilson's *Prehistoric Annals of Scotland*, and in Keller's *Ancient Lake Dwellings of Switzerland*, may be seen representations of beads, greatly resembling one from the crannog of Lough Ravel, county Antrim, as shown in fig. 168. Fig. 169,



Fig. 168.



Fig. 169.

Beads from Lough Ravel.

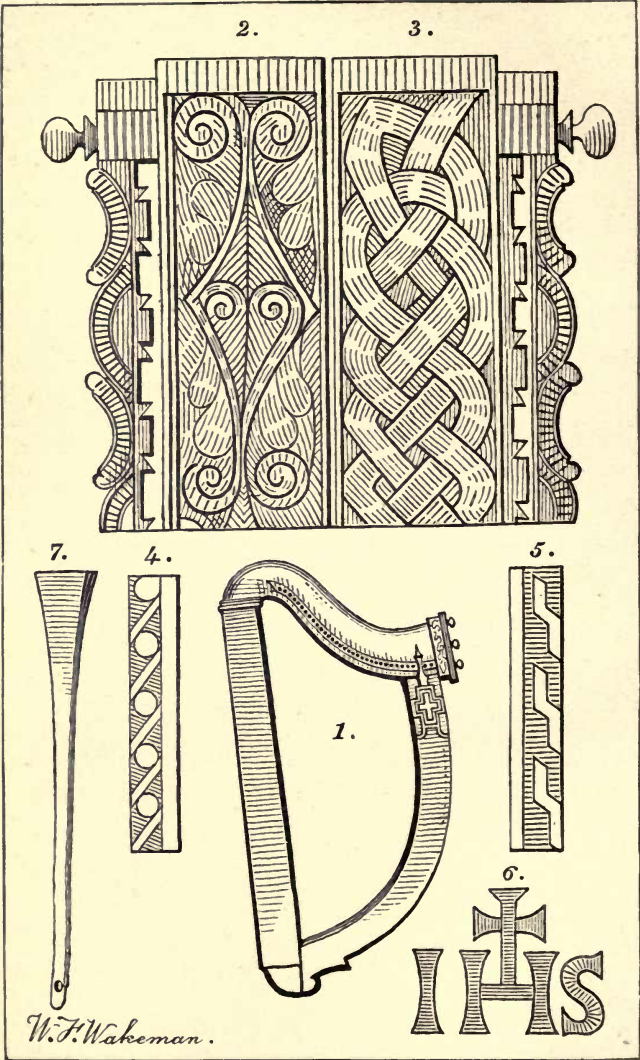
from the same locality, is somewhat similar, but the yellow, raised and rope-like decoration which encircles it does not form an integral part of the glass; it has been produced by laying the colour on the surface, instead of its being fused into the glass. The bead, fig. 170, although from the lands of Ballintlea, near Timahoe, Queen's County, is of the same class as many discovered in crannogs. At top and bottom it exhibited indications of friction, showing it had been strung with others as a necklace, or some article of personal adornment. It is formed of sea-green glass, moulded to represent interlaced cords, the strands composed of threads of white glass; round the upper and lower rims there



Fig. 170.

Glass Bead from Ballintlea.

* *Journal Royal. Hist. and Arch. Asso. of Ireland*, vol. vi. (New Series), p. 391.—W. F. Wakeman.



Harp, from the Crannog of Ballinderry. Woodwork restored.

are small knobs of opaque yellow glass. That these beads are of native Irish manufacture is extremely probable, as, in two instances at least, lumps of blue glass in an unfashioned state have been discovered in connexion with crannogs, which also yielded beads of exactly the same colour and material. The majority of the beads present internal evidence of the manner in which they were made: "the glass has at first been in the form of a rod, then a portion, when in a soft state, was bent into the form of a bead, and sufficiently heated to cause the ends to unite. . . . When the ornamentation is composed of a spiral rod, it has been laid on in the same way, and the line of junction can be made out in every case."*

Music.—It has been remarked that, in order to form a just estimate of the character of any particular people, it is necessary to investigate the pastimes and amusements most prevalent amongst them; war, and other contingent circumstances may place men at different times in different points of view, but when we follow them into the retirement of their homes, we are most likely to see them in their true state. In crannogs few musical instruments have come to light, owing probably to the perishable materials of which they were usually composed, yet enough remain to prove that, in time of peace, the sweet sound of the harp, and in war, the hoarse bray of the trumpet, resounded over the waters of the lakes. Portions of ancient harps have not unfrequently occurred in crannogs, but no fairly perfect example has as yet come to light. Some harp pins are formed of bronze, and several of



Fig. 171.—Bone Harp Pin from Ardakillen. Half-size.

bone were found at Ardakillen. In the Museum, R.I.A., there are upwards of twenty harp pins, the majority obtained from crannogs: they vary in length from $2\frac{1}{8}$ to $4\frac{1}{8}$ inches, are square in the head, and perforated in the smaller extremity, for holding the wire string. In the accompanying plate xxviii., is figured (1) an Irish harp as restored: it stands at present 37 inches in height,

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. v. (4th Series), p. 534.—W. J. Knowles.

all the metal portions were discovered in the crannog of Ballinderry, county Westmeath, and the proportions and form of the modern woodwork were regulated by the size and form of the original metal work; the thirty-five pins show the number of strings that were formerly attached. Although the style of decoration is of a very early character, yet as the letters I.H.S., surmounted by a cross, appear engraved on a brass plate in front of the instrument, the work cannot be older than the sixteenth century. Nos. 1, 2, 3, 4, and 5, convey a clear idea of the kind of ornamentation on the metal fittings, and No. 7 (from Drumdarragh crannog) represents a harp pin of the usual kind.

In 1809, at Ardbin, parish of Annaghelone, county Down, both joints of a very large and perfect curved bronze trumpet, or bugle-horn, were disinterred from a peat bog that had been a sheet of water about the middle of the last century. As conclusive proof of there having been a crannog in this former lake-bed, a stratum of burnt oak, a canoe scooped out of a single tree, together with four short paddles, were dug up from the peat. Of the trumpet, the remains—minutely described in the *Newry Magazine* for 1815—are now in the Museum, R. I. A., and in the accompanying engraving (fig. 172) the outside trumpet is a

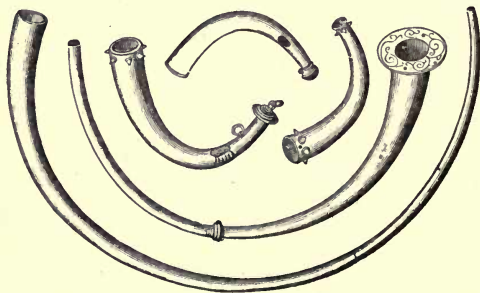
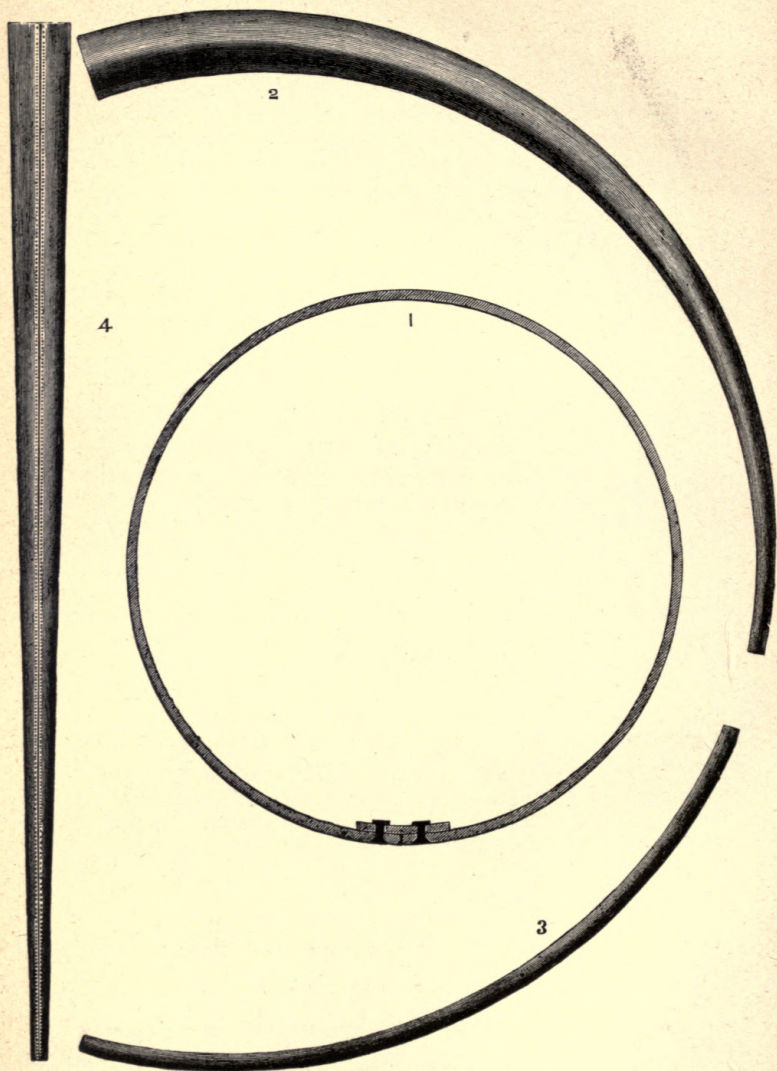


Fig. 172.—Trumpets in the Museum, R.I.A.

representation of this instrument. As may be observed, from comparison with the various other horns in the Museum, it is by far the largest of that collection, and is probably (as asserted by Wilde) the finest of its kind discovered in Europe. The trumpet is given on a larger scale in plate xxix.: "it measures





BRONZE TRUMPET, NOW IN THE MUSEUM OF THE ROYAL IRISH ACADEMY,

FOUND IN THE CO. DOWN, A. D. 1809.

Figures 2 and 3 side view of Trumpet, scale one and a-half inch to a foot; Fig. 4 shows the joining of the plate, and of the two lines of rivets of Fig. 2; Fig. 3 is similarly rivetted.

Fig. 1 section of fig. 2 at larger end, full size, showing strap and rivets.

8 feet 5 inches along the convex margin, and consists of two portions, each formed of very strong sheet bronze of a yellowish red colour, and joined along the seam." It is $3\frac{1}{2}$ inches wide at the open of the large end, and $\frac{5}{8}$ at the upper; the small tube has parallel sides, and is about the size of the small extremity of the larger. By what means the two were joined together, or whether a mouth-piece was attached to the small extremity, is unknown, yet a variety of loud martial tones can be produced by the lower fragment. "The riveting of the edges in this instrument is the most perfect thing of its kind yet discovered, and is well exhibited in the accompanying cut, drawn the natural size from portions of its external and internal surfaces. The bronze strap which covers

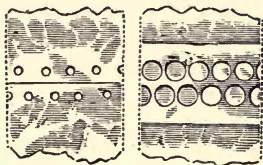


Fig. 173.—Showing riveting of Trumpet. Full size.

the joining on the inside is studded with small circular-headed studs, riveted on the outside, as shown in the lower section of the cut. There is no strap externally; and the perfection of the riveting has long been a subject of admiration to the curious, there being as many as 638 rivets in the lower portion.* By what means they were introduced throughout, or what description of mandril was employed for riveting them upon, is still subject of speculation."† To judge from its size, this kind of war trumpet should give no uncertain sound. It is stated by Polybius, that on the continent "the parade and tumult of the Celts terrified the

* *Cat. Mus., R.I.A.*, pp. 531-2.

† Sir Denham Jephson Norreys, in a Paper contributed to the R. Hist. and Arch. Asso. Ireland (*Journal*, vol. iv., pp. 278-79), thus explains the original process of riveting:—

"1st. Prepare a wooden core, or mandril, of the size and form of the inside of the trumpet.

"2ndly. Place the strap of bronze to hold the rivets in the centre of its inner surface.

3rdly. Cut the plate of bronze which is to form the trumpet to such a size that, when folded on the core, the edges may meet accurately on the centre of the bronze

Romans, for there was amongst them an infinite number of horns and trumpets," &c. And in describing the Celtic Gauls, Diodorus Siculus says, "they have amongst them trumpets peculiar as well to themselves as to other nations; these by inflation emit an hoarse sound well suited to the din of battle."

Chess, &c.—In early Irish mss. frequent mention is made of chess as a favourite amusement of the Celtic people; and in "The Dialogue of the Ancient Men"—a valuable tract contained in the *Book of Lismore*—there is a curious passage relating to a game of chess, the players being Finn Ban Mac Breasel, son of the king of Leinster, and Guaire Goll, one of Fionn Mac Cumhail's chess-bearers; the wager was three ounces of gold, and the players quarrelled as usual. The passage is here given as a record of the prevalence of this game at a remote period: "And these two played for three days, and Guaire did not win one game during that time. And he threw down his wager, and insulted and abused the other man, and he said 'he was not a servant in service, nor a vassal in vassalage, nor a hero in heroism;' and Finn Ban raised his fist, and gave Goll a blow that brought three front teeth out of his upper jaw, and they fell together on the back of the chess board." Another anecdote in proof of the prevalence of the

strap: hold all together by solder, or by any other means—perhaps coils of wire may have been used.

"4thly. Drill the holes for the rivets, countersinking them on the outside. See Plate xxx., fig. 1.

"5thly. Remove the wooden core.

"6thly. By means of a cleft stick (or other contrivance) insert the rivets from the inside, outwards.

"7thly. As each rivet passes through to the surface it is to be drawn up as tightly as possible; the shank is to be bent back, or held up by any other means, so that the head of the rivet shall not be allowed to fall.

"8thly. Having inserted all the rivets, insert a metal core, or mandril, fitting the interior with great exactness.

9thly. Complete the riveting from the outside, the metal core preventing the rivet-heads from being disturbed, and allowing the countersunk portion of the hole to be securely filled by a portion of the shank.

"10thly. Remove the metal core. The trumpet is now ready to be burnished off.

"After writing the above, it occurred to me that I had neglected to inquire how the inner strap was to be held in its place for the insertion of the rivets. Ordinary solder could not have been used, as none appears between the strap and the plates. It might, perhaps, have been effected by a slow removal of the wooden core, and by the insertion, from the smaller end of temporary rivets or fastenings, as the core was being pushed forward; by such means at least half of the length of the strap could be firmly held in its place."

game may be found in O'Curry's *Manners and Customs of the Ancient Irish*; in it the scene is also laid in the pagan age, but anterior to the time of the famous Finn Mac Cumhail—* “It was a century before the Incarnation, that Eochaidh Airemh was monarch of Erin, and his queen was the celebrated Edain, a lady remarkable not only for her beauty, but for her learning and accomplishments. One day that Eochaidh was in his palace at Teamair (according to this ancient story), a stranger of remarkable appearance presented himself before him: ‘Who is this man who is not known to us, and what is his business?’ said the king. ‘He is not a man of any distinction, but he has come to play a game at chess with you,’ said the stranger. ‘Are you a good chess-player?’ said the king. ‘A trial will tell,’ said the stranger, ‘Our chess-board is in the queen’s apartment, and we cannot disturb her at present,’ said the king. ‘It matters not, for I have a chess-board of no inferior kind here with me,’ said the stranger. ‘What do we play for?’ said the king. ‘Whatever the winner demands,’ said the stranger. They played then a game, which was won by the stranger. ‘What is your demand now?’ said the king. ‘Edain, your queen,’ said the stranger, ‘but I will not demand her till the end of a year.’ The king was astonished and confounded; and the stranger, without more words, speedily disappeared.” It is clear that chess is a game of great antiquity,

“Age cannot wither it, nor custom stale
Its infinite variety.”

From the crannog of Lagore was obtained a thin stone or slab of squarish form, measuring about 14 inches on either side. It presented upon its upper surface a number of squares as on a chess-board.† The material for this purpose, however, varied considerably, for in the “Annals of Clonmacnoise” it is stated that when *Muirchertach* of the leathern cloaks (who lived in the middle of the tenth century) carried off the body of Cerbhall, king of

* The mss. from which it was extracted by O'Curry is the “Leabhar-na-h-Uidhre,” written about A.D. 1106, but the tale, as therein recounted, was extracted from the “Book of Dromsneachta,” a work undoubtedly written before, or about the year 430.

† W. F. Wakeman states that at one time this slab was in the possession of Petrie, the well-known antiquary. An engraving of a chess-board of the fourteenth century shows but 42 squares, 7 × 6.

Leinster, he caused a chess-board to be formed out of his bones. Instances of utilizing the osseous remains of a dead adversary were, in ancient times, not uncommon. The old Vikings, in imitation of their gods, quaffed their ale out of goblets composed of the crania of their enemies.

In Irish lacustrine sites a number of discs, formed apparently of deer's horn, or bone, have been frequently met with; these articles, as a rule, are ornamented on one side only with the dot and circle pattern, such as appears upon combs and other objects of bone; many were found at Lagore, Cloonfinlough, Ballinderry, &c., and they resemble one from the Loch of Forfar, figured in Munro's *Ancient Scottish Lake Dwellings*. The term "whorl" has been very generally applied to these discs, the supposition being, that their use was to aid in the rotation of the distaff or spindle. Some Irish archæologists, however, have suggested the idea of their being rather draughtsmen, or counters for a game; and English antiquarians have pronounced a similar opinion with regard to ivory discs discovered in that country. The latter suggestion certainly carries with it a great degree of probability; and although the game of draughts as now played cannot claim great antiquity, yet there were other pastimes in which little stones, shells, or nuts were employed by the ancients; but, as the arts of man progressed, "stones and shells were laid aside, and ivory counters became their substitute." Croften Croker in his tour through Ireland early in the present century observed two peculiar games then almost universal amongst the peasantry; one of them was played on lines usually marked on a board with



Fig. 174.

chalk, as shown in fig. 174. "Each player is provided with three counters (*small black and white pebbles or shells*) which are simply deposited on the board in turn; the game is won by getting these three counters in a straight line. The centre point is considered the most advantageous, and is always taken by the first player: when all the counters are deposited, moves are made from one point to the next should it be unoccupied, and so on until a careless move on either side decides the game, by allowing the adversary to form his three counters in a row." The unperforated discs ornamented on one side only it may be fairly

surmised had served either in draughts or in games of that nature. Fig. 175 represents a specimen of this class found in a "souterraine" at Drumcliff, county Sligo, in company with calcined bones and traces of iron remains; it seems to be iden-



Fig. 175.—Unperforated Bone Disc from Drumcliff, Co. Sligo. One-half size.

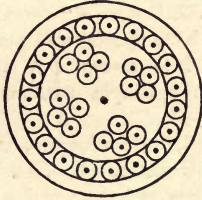


Fig. 176.

Unperforated Bone Discs from Cloonfinlough. Full size.

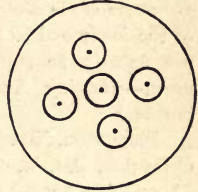


Fig. 177.

tical in style, size, and material with those found in crannogs, as for example fig. 176, from the crannog of Cloonfinlough, ornamented with a border of circles with dots in the centre surrounding four groups of similar circles: each group consists of four circles. Fig. 177, from the same locality, is plainly decorated with five circles arranged in a cruciform pattern. Both these articles are stained a dark-brown colour.*

With regard to the perforated discs, it should be borne in mind that they were of the same size as the *unperforated*, were decorated with similar designs on one side only, and that it is almost incredible so much trouble should have been bestowed on the ornamentation of an object intended to serve merely as a



Fig. 178.—Perforated ornamented Bone Disc from Lagore. One-half size.



Fig. 179.

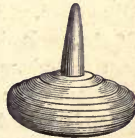


Fig. 180.

Perforated Bone Discs, with Spike, from Lagore. One-half size.

spindle whorl, as for example on the accompanying examples from Lagore. The more natural inference seems to be, that

* British Museum.

these discs were employed in some game—say chess—the perforations being intended for reception of the upper parts, marking the distinctive character of the various pieces used in the game. Nos. 10 and 11, plate xxv., may possibly have been these distinctive upper portions. An object similar to fig. 180 is described in the *Catalogue of the Museum, R. I. A.*, as a “whorl,” in which a portion of the lower end of the bone spindle still projects; but might it not equally be supposed to represent a chessman—possibly a pawn—judging from the simple outlines of its projecting portion?

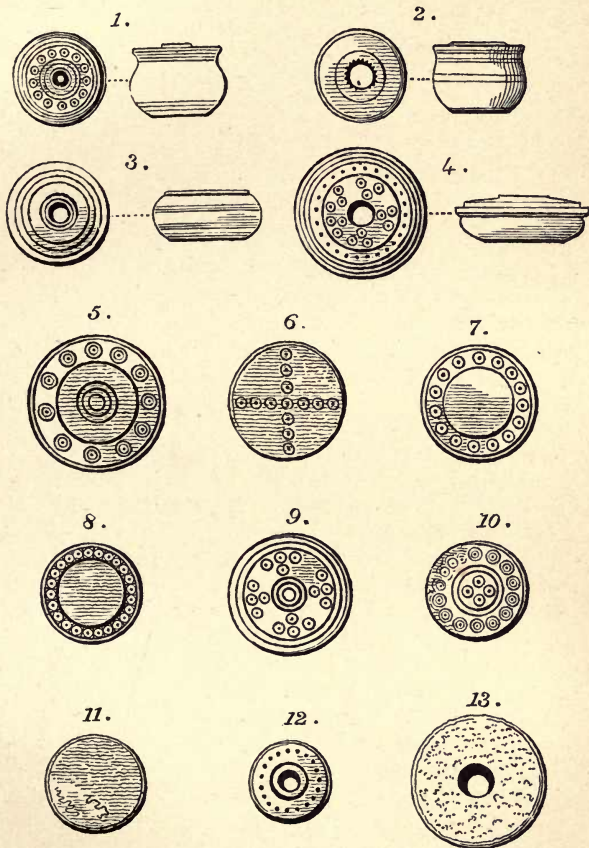
Plate xxx., Nos. 1, 2, 3, 4, from Lagore, and now in the Petrie Collection, R. I. A., are all perforated. Nos. 5, 6, 7, 8, 9, 10, and 11 are discs formed of bone or horn, varying in thickness from $\frac{1}{4}$ to $\frac{1}{8}$ of an inch; No. 6, however, is scarcely $\frac{1}{16}$ of an inch. All these are unperforated, therefore could not have been used as “spindle-whorls.” No. 11 is quite plain, the other specimens are ornamented, but only on one side; all the above are of bone; Nos. 12 and 13—both of them composed of stone and perforated—also came from some of the crannogs in the neighbourhood of Strokestown, and the latter is a good specimen of the so-called “whorl” commonly found in the northern counties, where hundreds of them have been discovered in a great variety of places, in earns, crannogs, plough lands, &c.

Fig. 181, from Cloonfinlough, is, it is believed, a unique specimen of a stone chessman, rounded in the body, diminishing towards the top, and flattened at both extremities. It is $1\frac{3}{16}$ inch in height, $\frac{3}{4}$ inch in diameter, and is polished; the material beautifully veined, yellow, pale brown, and white.

Ogham.—It is a disputed point, with regard to Ogham inscriptions, whether the signs represent a very ancient alphabet, or are merely a mediæval invention, or cipher. Some allusions to be found in old Irish mss. refer them to ante-Christian times; but it may also be observed, that in similar writings frequent mention is made of a man’s *Ogham name* as being scribed on a stone raised in commemoration of him; such name must therefore be inferred to differ from that by which he was ordinarily known. Now, if Ogham be viewed as a cipher, dating only from the early



Fig. 181.—Stone Chessman, in the British Museum.



Scale one half

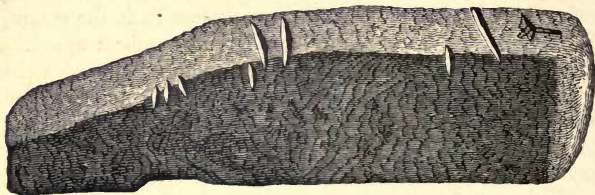
W. F. Wakeman

monkish period of Christianity, the *Ogham name* may mean simply what in the present day would be termed *the name in Religion*. It is, however, immaterial for the present purpose to which category Ogham characters be assigned, for in either case they belong to the metallic age, as probably no race in the stone age had attained the art of communicating ideas by means of an alphabet. Even in the present day, when seeking to civilize barbarous tribes, it is found essential, for the purpose of imparting information, to adapt their languages to an alphabet. Ogham may be briefly described as an arrangement of strokes, or indented lines or notches cut on the arris, though sometimes found on the flat of the stone or other material, when a straight line is substituted for the arris. The letter is denoted by the length of the stroke or notch, its position, whether above or below the arris or line, or appearing both above and below, and likewise the number of strokes or notches grouped together. Oghamic scribings have been found on a stone in the crannog of Ballydoolough, and on bone pins and other ornaments in the crannogs of Ballinderry and the Strokestown group. Ogham appears to have been employed not only for mortuary inscriptions carved on pillar-stones erected over celebrated warriors, but also, in the same manner as we now use the Roman alphabet, for communication by messengers, &c. On one occasion a celebrated mythical Irish hero, named Cuchullain, when traversing a forest saw an inscribed pillar-stone, and hung round it a verse in Ogham character, carved by him upon a withe.* The ms. from which this anecdote is quoted was compiled about the year 1106. The same hero is elsewhere represented as sending information to Meave, queen of Connaught, by means of cutting or scribing on wands; the son of a Scottish chief is described as cutting Ogham characters on a spear. The date of the latter incident is assigned to the commencement of the Christian era. Another instance is mentioned, partaking however more of the nature of a regular letter. In A.D. 408, Corc, son of the king of Munster, was driven by his father into exile; he fled to the court of Scotland; but, before appearing in the king's presence, an Ogham inscription on his shield was discovered and deciphered by a friend, who thus saved the prince's life, the inscription being to

* *Ulster Journal of Archæology*, vol. iii., p. 11.

the effect that, should he arrive at the Scottish Court by day, his head was to be cut off before evening, and if by night it was to be cut off before morning.*

It is almost needless to add, that all Ogham mortuary scribings are in very antique language, thereby adding considerably to the difficulties attending any attempt at translation of these archaic inscriptions. The Gaelic of to-day, where it yet lingers, is to the ancient dialect much what modern English is to the Anglo-Saxon of olden times. The oldest lettered characters of the Irish lake dwellers are Ogham or runic-like markings on stones, amulets, pins, and brooches. An important "find" at Ballydoolough consists of a block of hard reddish sandstone, measuring 2 feet 1 inch in length, by $4\frac{1}{2}$ inches in breadth, and 6 inches in depth. On it are well-marked Ogham characters, and these, when read by the light of the Ogham alphabet, would seem to spell the word BALHU.



Ogham found at Ballydoolough Crannog.

Fig. 182.

In the comparison of Irish and Gaulish names by Professor Adolph. Picket† is found the Celtic name "Balanan" (BALANU), which seems very like that on the stone. At the thicker end of this stone, just before the commencement of the Ogham, a slightly-marked cross of peculiar form may be traced;‡ and the

* *Book of Leinster*, p. 206, as quoted by O'Curry, *Lectures*, p. 469.

† *Ulster Journal of Archaeology*, vol. vii., p. 73.

‡ W. F. Wakeman offers a suggestion in connection with the name Balhu; he states that Joyce in his *Irish Names of Places* translates the name of the Fermanagh town of Lisbellaw, *Lis-bel-atha*, the *lis* of the ford mouth. Now, there was no river ever there, consequently there could be no "ford mouth." There is certainly a *lis* or fort in the neighbourhood, but the little stream which now drives the woollen mill

accompanying illustration represents, full size, a fragment of an ornamented stone, from Ardakillen, inscribed with Ogham-like scores.

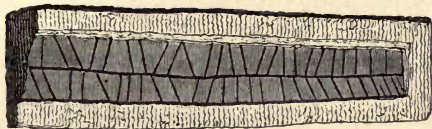


Fig. 183.—Scribed Stone from the Crannog of Ardakillen. Full size.

Money.—The precious metals, shaped for purposes of traffic, at once stamp crannog “finds” with a modern, or at least with an historic date. Very few coins, however, have come to light; the most numerous are of the reigns of Mary and Elizabeth, some of them being forgeries. In the crannog of Cloonfinlough the coins varied in date from one of the Emperor Hadrian to a specimen of the brass money of James II. One coin was discovered under such strange circumstances that it claims special mention:—In the lake adjoining the glebe house, in the parish of Aghnamullen, county Monaghan, there are two islands, and about the year 1850 one of them was for the first time ploughed, and many curious antiquities turned up. In 1863, the rector then in possession, while seated on the island, and peering into the water, observed what to him appeared a button on the leaf of a water-plant growing up from the bottom of the lake; on pulling the leaf, this proved, however, to be an ancient coin—a half groat of the reign of Edward III. The natural growth of the aqueous vegetation had thus lifted to the surface of the lough some of its buried treasures.*

Strange as is this incident, it is surpassed by one related in connexion with the discovery of a silver penny of King John. It appears that upon preparing a fish of the bream species, taken in Dalkey Sound, the coin referred to was found in its stomach, and

of Lisbellaw flows through a deep cutting communicating with Loch Eyes, and which was made only in recent times. The *natural* outlet from the loch ran, and still runs, in a northerly direction, and cannot have influenced the naming of Lisbellaw, as its course commences at a distance of some miles from the village. “The name Lisbellaw seems to invite investigation. Could it be translated ‘the fort or lis of Balhu,’ even as Dunleary is ‘the fort or dun of Laighaire’”?

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. v. (New Series), p. 229.

as it is on record that some time during the reign of John, a ship containing a large sum of money was sunk close to the place where the fish was captured, it is but reasonable to suppose that the coin in question had formed a portion of the lost treasure.

Horse Furniture.—At Ballinacarriga, near Moate, county Westmeath, the peaty mould of a lake, now almost dried up, has at various times yielded numerous objects of interest. One of them (plate xxxi.) is thus described by Alderman Day, F. S. A.:—"It somewhat resembles in shape the wooden forepart of a cavalry saddle of the present day, but here the likeness ends; this piece of horse furniture is covered with interlaced knot-work of the choicest kind, similar to the well-known ornamentation upon our ancient Irish crosses. The timber composing it is yew, which fortunately was preserved by being deposited in the peaty mould of the lake bottom. The centre of the pommel is pierced by a very Moorish-looking horse-shoe ornament, and both sides of the timber are carved in compartments, no two of which are alike in their filling up of scroll and net-work. Even the top of the pommel, of both near and off side, differs in the pattern of the ornament. The points of the pommel at both sides are pierced with two holes, where the mark of the fong is apparent, by which the forepart was secured to the lateral boards which formed the seat of the

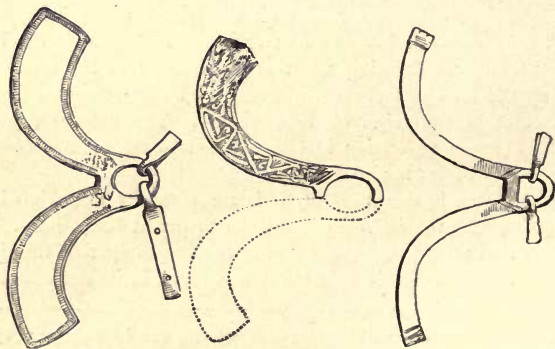
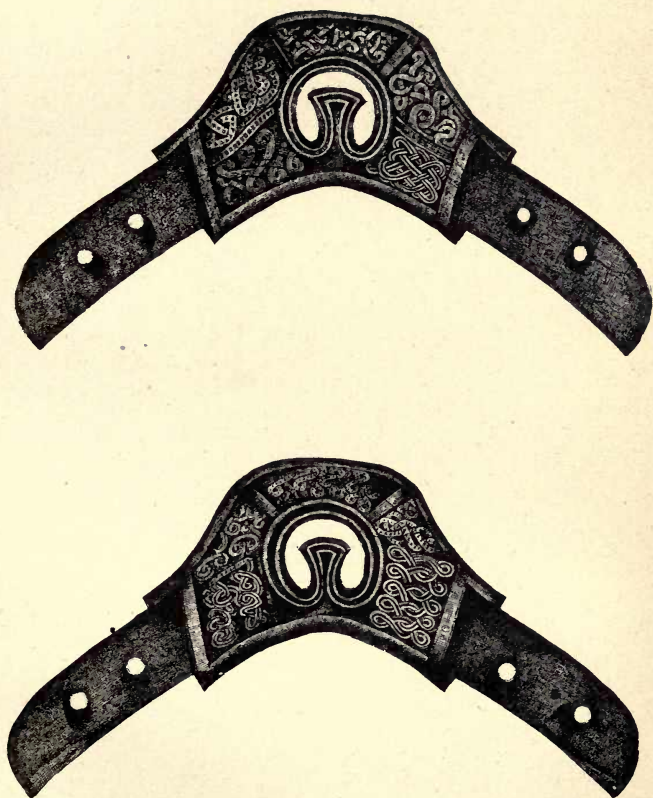


Fig. 184.—Cheek-pieces of Bits.

saddle, and both points are grooved for the reception of these boards." Bridle-bits, or cheek-pieces, were discovered in Loughran Island, in the river Bann: of these, one is quite plain, and the



Forefront of Ancient Irish Saddle. Back and Front view.

other remarkably slender; it measures 6 inches across—the two metal rein-straps still remain on the posterior loop. The third, fig. 184, represents a fragment merely, of one that had borne ornamentation.

Fig. 185 represents cheek-pieces from the crannog of Lough Faughan, and from Ardakillen. The bit proper, by which cheek-pieces of this class were connected, appears to have been

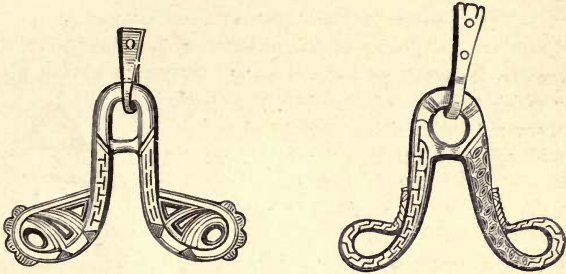


Fig. 185.—Cheek-pieces of Bits from Lough Faughan and Ardakillen. Two-thirds real size.

almost invariably composed of iron. A perfect specimen with bronze mountings is represented in Shirley's *History of County Monaghan*. An example of the iron bit which is supposed to have succeeded that composed of bronze and iron is here given.

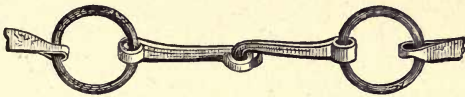


Fig. 186.—Iron Bit from Lagore. One-fourth real size.

It came from Lagore, as did also several flat pieces of iron, which there is reason to believe had been attached as ornaments to some article of horse trapping. They measure 3 inches or so in length, by about $\frac{3}{4}$ of an inch in breadth, and are most curiously decorated in enamel of various colours, the patterns being geometrical interlacing figures in the style known as *Opus Hibernicum*; at the time of their discovery, they presented the only examples of enamel on iron which had then been noticed, and some of them may now be seen in the Petrie Collection of the Museum, R. I. A. It is not known when enamel was first used in Ireland. Some

writers refer its invention to the Gauls, on the authority of a passage from Philostratus (who lived about the commencement of the third century), to the effect that the barbarians bordering on the ocean knew how to spread colours upon hot metal so as to



Fig. 187.—Enamelled Plate of Iron from Lagore. One-half size.

become on the cooling of the material as hard as the substance over which they were laid. Fig. 187 represents a small plate of iron, covered with a rich pattern in enamel—vermilion, yellow, and black; and fig. 188 is an ornament of mixed metal supposed, like the preceding, to belong to a piece of horse furniture: it is inlaid with red, brown, and yellow enamel, and “exhibits also specimens of a remarkable glass-mosaic in chequered work of blue and white, encrusted in cavities chiselled out on the face of the metal. This kind of ornament is found occasionally on ancient Irish works in metal, it bears much resemblance to some antique ornaments discovered with Roman remains, and it occurs on the curious bronze basin found in the bed of the river Witham near Lincoln.”



Fig. 188.—Inlaid Ornament of Mixed Metal from Lagore. Two-thirds real size.

Miscellaneous Articles.—It would be impossible to classify all the articles brought to light on lacustrine sites; indeed the use to which some of them were, or could be, applied must now be purely conjectural, so widely do the habits of life in the present advanced state of society differ from the rude and primitive existence of the lake dweller. To the representation of objects, whose use could not now be defined with any degree of accuracy, have been added—since the work went to press—a few plates of miscellaneous articles that fell under the writer’s observation in the interval. They are of interest, as throwing still further light on the details of the lake dwellers’ ordinary pursuits.

Amongst the debris of crannogs have been found several designs carved upon the polished surface of the larger bones of





Fig. 1.
Decorated Bone from Arda-
killen. One-third real size.



Fig. 2.
Decorated Bone from
Lagore. One-third
real size.



Fig. 3.



Fig. 4.



Fig. 5.
Embossed Patterns on
fig. 1. Real size.



Fig. 6.



Fig. 7.



Fig. 8.



Fig. 9.

Ornamentation on Bone from Lagore. Real size.



Fig. 10.



Fig. 11.



Fig. 12.

Ornamentation on Bone from Lagore. Real size.

mammalia. Sir W. Wilde observed that clear, sharp, and accurate impressions might be made from some of these carvings in the same way that proofs are taken from a woodcut. In some instances the pattern is elaborately finished, and would answer equally well "as a design for the panel of a stone cross, the decoration of a doorway, or cornice of a round tower, a compartment of a brooch pin, the capital of an early ecclesiastical archway, the illumination of a ms., or the graving of a piece of warlike furniture." An example of this kind of decoration is shown on plate xxxii., fig. 1; it is the leg bone of a deer, $8\frac{1}{2}$ inches long, highly polished, and covered with carvings; its precise use is as yet conjectural. Figs. 3, 4, 5, are *fac-similes* of the embossed patterns on this bone.

Another carved leg bone of a deer (plate xxxii.), fig. 2, is stained a dark brown colour, probably by lying in peat; its polished surface shows how much it had been handled. Upon the surface of this bone there are various devices traced with a graver or other sharp tool. Figs. 6, 7, 8, 9, represent these (full size), and figs. 10, 11, 12, are characteristic of Celtic animal ornamentation.

In the Museum, R. I. A., there are eight thin plates of bone, varying in length from 1 to $5\frac{1}{2}$ inches; they are of every variety



Fig. 189.

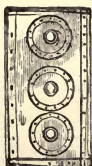


Fig. 190



Fig. 191.

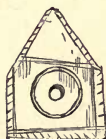


Fig. 192.



Fig. 193.

Plates of Bone, decorated, use not known.

of shape—square, triangular, irregular, but the majority oblong. In some respects they resemble in form, size, and ornamentation,

the class of small stone articles supposed to have served as toys, amulets, or in some kind of game. According to Wilde, however, their more probable use was either for the decoration of small caskets, or for dress fasteners. They are generally perforated in several places, and the foregoing illustrations display great variety of outline. Their outer surface, smooth and convex, was more or less decorated with a number of circular indentations and dotted lines. Most of the specimens were found in the crannogs of Ballinderry and Ardakillen.

Spoons formed of thin cuticular horn are not of unusual occurrence. The specimen represented, fig. 194, is one of two



Fig. 194.—Rude Bone Spoon found at Clooneygonnel. Two-thirds real size.

such articles found in the crannog of Clooneygonnel, and shaped out of the concave epiphyses, or joint surfaces of the vertebræ of some large mammal. A wooden handle had probably been originally attached to it.* Fig. 195, from Ballinderry, is a curious, rudely formed object of bone, perforated with four holes; its use unknown.†

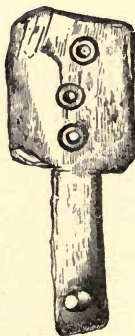
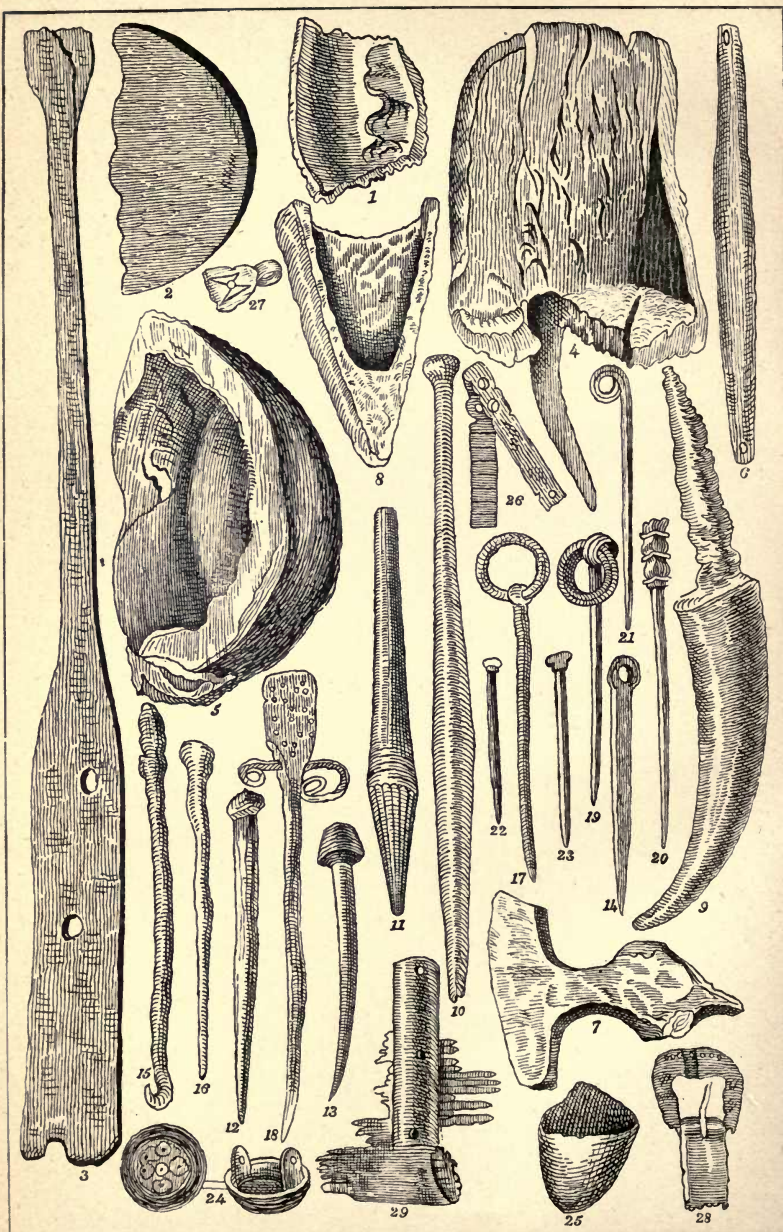


Fig. 195 —Spatula-shaped Bone from Ballinderry.

* *Cat. Mus. R.I.A.*, p. 267.

† *Ibid.*, p. 343.



Miscellaneous Articles found in Crannogs.

Plates xxxiii. and xxxiv. contain representations of miscellaneous crannog "finds" from Randalstown and Lough Guile, county Antrim, and Ballykinler, county Down: when not otherwise specified the articles are from the first-named locality. Plate xxxiii., 1, a piece of pottery ($\frac{1}{4}$ size) that seems to have formed part of an earthen vessel; it is coarse, strong, well made, and graceful in design; other fragments were met with, and judging from the appearance of fire on the outside of one, it had been used for cooking purposes. 2. A remarkable object of granite ($\frac{1}{3}$ size); two of similar form were found at Ballykinler crannog. 3. A paddle or oar made of oak, its length 3 feet 7 inches by $4\frac{1}{2}$ inches in breadth. 4. A wooden scoop; total length 12 inches, the handle 4 inches, thickness $1\frac{1}{2}$. 5. A wooden vessel found with a canoe; its diameter 7 inches, depth 3, and thickness 1 inch; it would be adapted for baling out a boat. 6 seems to be a netting needle ($\frac{1}{3}$ size); it is made of iron. 7. A battle-axe; length from face to end of projection at back 7 inches, length of face $5\frac{1}{2}$ inches, breadth 1 inch at the one end, and at the other $1\frac{1}{2}$ inches. 8. Iron sock of a plough; length $7\frac{1}{2}$ inches, greatest breadth 4 inches; it terminates in a point.

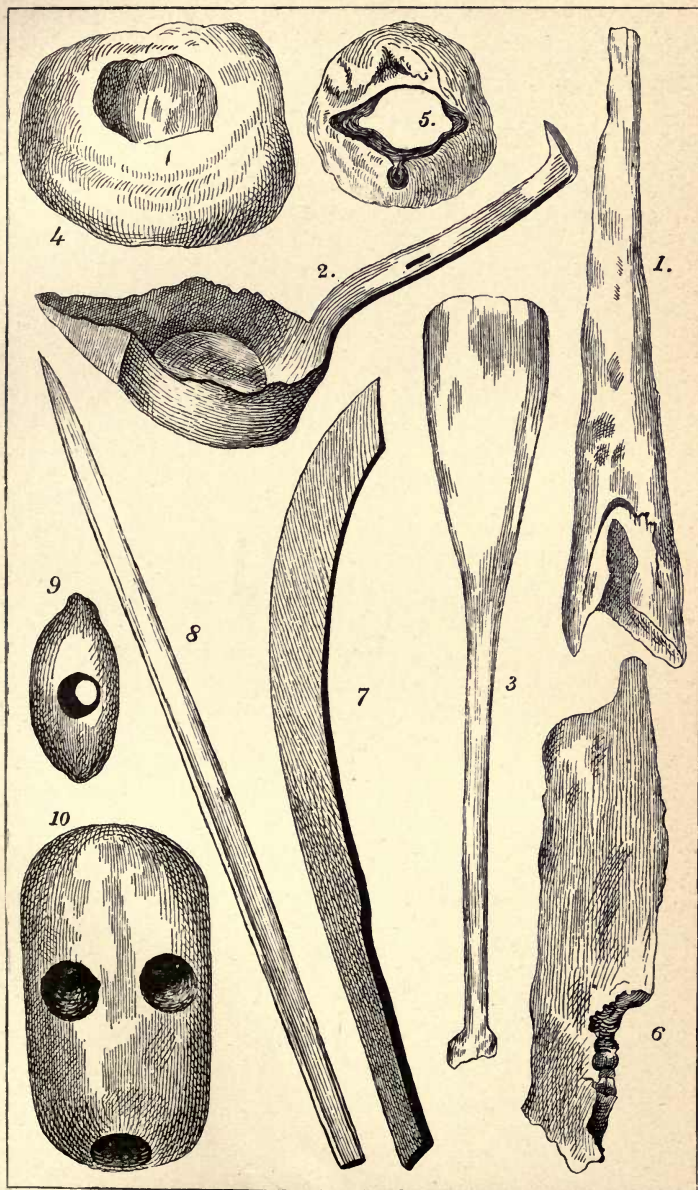
The following objects are all drawn one-half size:—9. A knife, the only specimen met with at Ballykinler crannog, having a handle. The haft is of goat's horn, and the blade like a penknife of large size; it does not seem applicable to any ordinary domestic purpose, but it may have been used for bleeding or operating on animals. 10. A wooden instrument—of which two were found—made of soft, long-grained wood of the pine kind; they might have been used for coarse knitting. 11. An instrument of similar wood, use unknown. 12. There were several like No. 12, formed of soft wood; they might have served as fastenings for mantle or hair. 13. An instrument of bone, neatly made and polished, which might have been used as a pin. 14. A pin, made of a close-grained, hard, white wood, probably holly; several of these were brought to light. 15. An article of iron, use unknown. 16. A pin of iron; several of these were found. 17, 18, 19, 20, 21, 22, 23, are pins of bronze. There were a great number resembling No. 17, also several of No. 19. 24. A large button made of bronze; the eyes are not fastened in but cast. 25. A crucible, seemingly of foreign manufacture, and unused; but several were met with greatly calcined. 26, 27, 28, seem to be fastenings

for leather or other garments; they are of very thin bronze. 29 is a comb made of bone and riveted with iron (found at Ballykinler crannog).

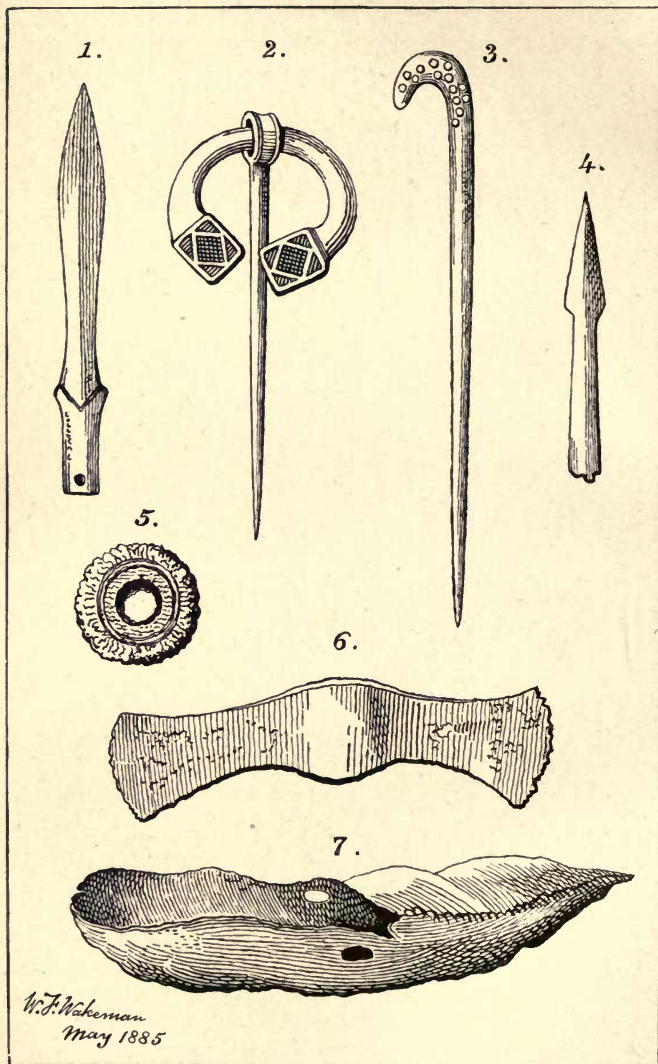
Plate xxxiv., 1, is a pointed and socketed iron instrument from Ballymena. 2, drawn about half-size, is evidently a lamp of late, or perhaps mediæval form, composed of iron, and the workmanship good; it had an upright handle pierced by an oblong hole, with another hole in a projection at end of handle. A gentleman saw a lamp of this class in use near Carrickfergus in the year 1840, as also in the islands off the coast of Ulster. 3 is a canoe paddle made of oak, and about 3 feet in length; 4 is of stone, and was found in a crannog in the county Down; 5 is a "spindle-whorl" (so called) made of jet, and having indentations on it for a thong or string; 6 is a flint knife (full size); the form is rather unusual, flint knives being generally straight; 7 is a full-size representation of the smallest of two bronze knives; the other differs from it in being 1 inch longer, and the shape not so curved; it should however be observed, that these two articles are supposed by some authorities to be modern forgeries. 8 is a bronze instrument about 6 inches long, and very sharp at the point; the metal and workmanship being similar to the knives, it therefore may also be spurious. 9. A lozenge-shaped "spindle-whorl" of jet. This and the three preceding are said to have come from Lough Guile. 10 is a stone, natural size, perforated with two holes crossing at right angles, and at each end a hole going a short way in. It is suggested that it may have been the axis of a small wheel, "the arms being inserted through the holes in the body of the stone, while it worked on two projections inserted into the holes at the ends."*

A pair of scales were found at Loughtarmin, and several at Lagore. At the latter place were also a number of sewing-needles, composed of various materials: the majority were of bone, about six or eight of iron, and four or five of bronze. Those made of metal were comparatively small and fine. Needles of the same kind have been met with in the great crannogs of Ardakillen and Ballinderry.

* Plates xxxiii. and xxxiv. are reproduced from a paper by the late Edward Benn, which appeared in the *Journal of the Royal Hist. and Arch. Asso. of Ireland*. Some of the articles represented may now be seen in the "Benn Collection," Belfast Museum.



Miscellaneous Articles found in Crannogs.



Objects of various Materials from the Crannog of Cloonfinlough, and now in the British Museum.

At Lagore was found a bronze object, use unknown, fig. 196. In one part it is ornamented with a beautiful chased design, once



Fig. 196.—Bronze Object found at Lagore. Full-size.

probably enamelled. In the same crannog there was a square iron pipe, $2\frac{1}{2}$ inches in length, to which a long hook was attached.

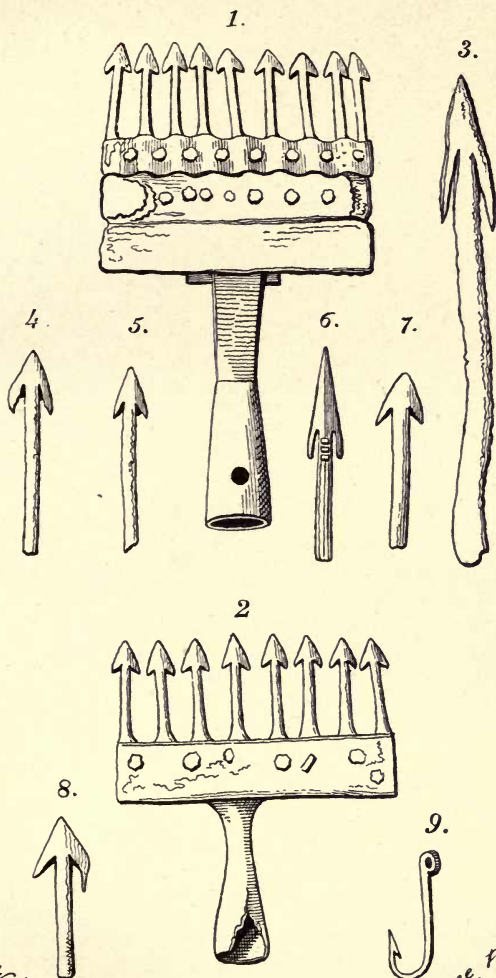


Fig. 197.—Iron Pipe with Hook, from Lagore. Full-size.

All the articles figured on plate xxxv. were found in the crannog of Cloonfinlough, and are now in the British Museum. No. 1 (one-fourth real size) represents a leaf-shaped dagger, skean, or knife, of an extremely early type; it is a characteristic specimen of its class. Similar weapons have, in Ireland, frequently occurred in company with socketed celts, paalstaves, spear-heads, and other implements of the so-called "Bronze Age." The handle is very small, perforated for insertion of a rivet, and probably the haft had been originally prolonged by the addition of a piece of bone, horn, or wood, secured to the bronze by means of the rivet. No. 2 (full-size) is an *eo* or brooch of bronze of a not unusual design, having a long pin and broad flat ends, with a sunk lozenge in each, filled with a hatched pattern. This form of dress-fastener must have remained unchanged during many ages, for whilst it

seems to have been common in the later "Iron period," it has also occasionally been found under circumstances which point to much earlier days and usages. One example was discovered in a cinerary urn amongst calcined bones. No. 3 (full-size) is a pin of bronze with a crozier-like termination, ornamented with a series of minute indentations, arranged without any regular pattern. A number of these objects have been discovered in Christian cemeteries in Ireland—as at Clonmacnoise and the Arran Islands. No. 4 (full-size) is a very small arrow-head of iron; traces of a rivet hole are yet discernible. No. 5 (one-third real size) is a ring made from the crown of a stag's horn, and polished on the interior; its use unknown. No. 6 (one-third real size) represents a double-bladed axe-head; similar implements occurred at Lagore and at Drumdarragh; they belong to the late "Iron period," and vary greatly in dimensions. No. 7 (one-third real size) is a single-piece shoe of leather, joined at the heel and toe; at each side is a slit for a thong or strap to be brought over the instep. Articles of this kind were used amongst the Irish down to a very late period. Some specimens, highly decorated in early Celtic style, have been figured by Wilde.

Fishing Implements.—It is probable that on account of the smallness of their size, many bronze fishing-hooks may have been overlooked by searchers amongst crannog sites, though a number of specimens formed of iron occurred amongst the relics of ancient Dublin during the excavations made many years ago in Christ Church-place, and Fishamble-street. Several implements of iron, evidently designed for the capture of fresh-water prey, have been found on the sites of crannogs, and may now be seen in the Museum, R. I. A. Plate xxxvi. No. 1 is the head of an eel-spear, one of several exhumed from the debris of the Ardakillen crannogs; no trace of the handle remained. The implement consists of nine barbed prongs (the wings of the heads nearly touching each other) set in an oblong-shaped socket, composed of extremely thin iron plates or bands, that measure in width $5\frac{1}{2}$ inches, in depth $2\frac{3}{4}$ inches, and are of sufficient strength to receive and secure the prongs; these average somewhat less than a quarter of an inch at their greatest diameter, which occurs near the head. The socket in its various parts is secured together by a number of rivets, irregularly set; from it descends a shaft measuring $4\frac{3}{4}$ inches. It is at first quadrangular, but midway assumes a cylindrical form, resembling



W. J. Wakeman
1885.

Scale one third the
real size.

Fishing Implements of Iron from Crannogs. Nos. 2, 3, 4, 5, 6, 7, and 8 from Ardakillen or Strokestown Crannogs. No. 9 from Lagore. All one-third real size.

sockets of crannog spears of the later "iron period," and like them secured to wooden handles by a rivet. The implement presents altogether a rough and bizarre appearance. No. 2 is a smaller example of an eel-spear, with socket, and having only eight barbed prongs. No. 3 is another form of fish-spear, or gaff. It measures $9\frac{1}{2}$ inches in length, and is furnished at its pointed head with two long narrow barbs designed for holding. Unlike the spear and arrow-heads used in war, or in the chase, this implement was secured to its wooden shaft by a tang. Nos. 4, 5, 7, and 8, are darts or spear-heads of the same class. Save in size, they differ very slightly from No. 3, but are considerably eroded by the moisture of the bog-stuff in which they were embedded. No. 6 is a highly-finished head of the fish-spear class, though at first sight it might almost be taken for an arrow-head. Its barbs were, however, evidently intended to hold any substance into which they might be struck; the tang is solid and octangular, and just at the point where it joins the head there are three rather deep transverse notches. No. 9 is an ordinary iron fish-hook.

Historical Notices of Crannogs.—According to Keller, Swiss "*Pfahlbauten*," or pile dwellings, attained their highest development about fifteen hundred years B.C. This statement he founds on the absence in them of traces of winter corn, hemp, and domestic fowl (unknown to the Greeks till the time of Pericles). These lacustrine sites appear to have been abandoned about, or perhaps before, the commencement of the Christian era; whilst on the other hand, although we have no account of the first erection of crannogs in Ireland, and must therefore consider their origin to date back from prehistoric times, yet we have undoubted proofs of their continued use down to the close of the seventeenth century; although now where

" . . . swells the wave
All other sounds are still,
And strange and mournfully sound they;
Each seems a funeral cry
O'er life that long has past away,
O'er ages long gone by."

In Connaught, next after Ulster, the greatest number of lake dwellings have been discovered, but a list of them could have only temporary value, as further explorations might greatly change, or even reverse, the numerical superiority of the crannog sites in

Ulster. It is only of late that Munster can be said to be embraced within the lake-dwelling area, whose ambit now includes the entire kingdom. From the present stand-point, the northern province, however, seems to have been *facile princeps* the home of the lake-dweller. Its population, even to the close of the seventeenth century, followed a life of rude and primitive character. The waters of the Erne, its tributaries and lakes, stretched for a distance of nearly sixty miles; the counties of Monaghan and Cavan of the present day formed then a district of low wooded hills, interlaced with a perfect network of bogs and lakes, through which ran but one road—that by Carrickmacross in the barony of Farney—whilst the Few mountains, at that period wooded, served to complete a “scientific frontier” of nature’s own formation. The term “Lake Country” has often been applied to the county Fermanagh: indeed the whole territory would seem at no very remote date to have been a watery maze. Upon almost every side may be observed either marshes that had once been lakes, or else sheets of water varying in size, from what may be termed lakes to mere lakelets; and at a period when the whole neighbouring country was one mass of wood these inland loughs served as tolerably secure retreats. At the time of the Anglo-Norman invasion of Ireland castles on terra firma seem to have been but lightly esteemed by the northern chieftains, for the conqueror of Ulster had erected many strongholds to secure the subjugated territory, more especially in the country of Mac Mahon, who “with solemn protestations vowed to become a true and faithful subject, whereupon de Courcy gave him two castles with their demeanes to hold of him. Within one month after this Mac Mahon brake down the castles, and made them even with the ground. Sir John de Courcy sent unto him to know the cause: his answer was, that he promised not to hold stones of him, but the land.” Later on one Thomas Pettiplace, in answer to an inquiry from the Government as to what castles or forts O’Neil was possessed of, in a letter of the 15th May, 1567, states:—“For castles I think it be not unknown unto y^r honors he trusteth no points thereunto for his safety, as appeareth by the raising (*razing*) of the strongest castles of all his countries, and that fortification that he only dependeth upon *is in sartin ffreshwater loghes* in his country, which from the sea there come neither ship nor boat to approach them; it is thought that there in y^e said *fortified islands* lyeth all his plate, w^{ch} is much, and

money, prisoners, and gages, w^{ch} islands hath in wars before been attempted, and now of late again by y^e Lord Deputy S^r Harry Sydney, w^{ch}, for want of means for safe conduct upon y^e water, it hath not prevailed." Of the unsuccessful attack on the crannog or stockaded island, to which allusion is thus made, the account forwarded by Sir Henry Sydney to Elizabeth, dated Drogheda, 12th November, 1566, is here given:—"On Thursday, the 17th of the last September, I, your Highness' Deputy, accompanied with the Earl of Kildare, the Marshal Francis Agarnde and Jaques Winge-felde, with the rest of the captains and soldiers of your Highness' army—each man in his calling as willing to serve your Majesty as ever I saw men—issued out of this town of Drogheda, and encamped in the confines of the English Pale and O'Hanlon's country, at a place called Roskeaghe, where we were forced to remain, for sundry necessary things not come as then out of the English Pale, four nights. So, on the 21st of the same month, we removed and marched towards Ardmach, and in the way, having occasion to encamp hard by a lough, in which was an island, and in the same, by universal opinion and report of divers of that country, a great quantity of the rebels' goods and victuals kept, only without guns, as it was thought, not greatly strong as it seemed, being but hedged about, and the distance from the main not being passed five-score yards, the army coming timely to the camp, divers soldiers were very desirous to attempt the winning of it, which was granted to them, I the Deputy making choice only of such as could swim; nevertheless there was prepared for them a bridge which floated upon barrels, whereupon they went but disorderly, for many more went than were appointed, among whom Edward Vaughan, a gentleman of Wales, who being none of the army, but come over to serve this journey, as many more gentlemen and others of that country and the marches of the same did, was one who, unwitting to me your Highness' Deputy, being gone from the place where the bridge did lie, to stay the shot of the army, least they should hurt their followers, with divers others not appointed, stepped upon the bridge and rowed away, which overcharge of men caused the bridge more to sink than else it would, and yet not so much but that it floated still and carried them over, but in such sort as the fireworks conveyed with them miscarried, so they were able therewith to do nothing. They found the place better manned than it was thought, and they of better courage

than before that time the like men had ever shewed themselves in the like place. They found the hedge so bearded with stakes and other sharp wood, as it was not without extreme difficulty scaleable, and so ramparted as if the hedge had been burned—for doing whereof the fireworks failed—without a long time it was not to be digged down. Yet some scaled to the top, whereof Edward Vaughan was one, who being pushed with a pike from the same, fell between the hedge and the bridge, and being heavily armed—albeit he could swim perfect well—was drowned, and two others hurt upon the rampart and drowned; one other slain upon the bridge with a shot; a man of mine, the Deputy, slain upon the main with a shot; and Anthony Deringe, a servant of the Earl of Leycester's, stricken through the thigh without perishing any bone, and is perfectly recovered; the rest, unhurt, returned upon the bridge to the land. We write of this trifle thus largely to your Most Excellent Majesty least some malice or ignorance might inform the same contrary to the truth; and as many of us as were at the journey by these our letters affirm this to be the truth, and the whole truth, of that fact."

Extracts that here follow, from notices of crannogs contained in native annals,* trace back their existence in Ireland during a period of over a thousand years from the seventeenth century.

After the surrender of Charlemont, Sir Phelim O'Neil "retired to a fortified island called *Raghan* (? Roughan) *Isle*, and was there captured in February, 1653, by William Lord Charlemont."†

A small lake situated somewhat to the north-west of the village of Desertmartin has given title to the barony of Loughinsholin, lying south of the city of Londonderry; it was so named from *Inis Ua Fhloinne* (O'Lynn's Island), a stockaded dwelling near its eastern margin. The lake itself is now known as Lough Shillen. The oak piling that formerly surrounded the island was removed for firewood, leaving a mere bank covered with reeds and low bushes. In Father O'Mellan's *Journal* (written in Irish) of the rebellion of 1642, he mentions two attacks on the island by the English, in the years 1642, 1643; and again in 1645, its final abandonment and destruction by fire on the part of the Irish,

* When not otherwise notified, the extracts are from the *Annals of the Four Masters*, or from O'Donovan's annotations to same.

† *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (New Series), p. 139.

owing to inability to hold out from want of provisions. He states that on the "27th April, 1642, the Coleraine detachment (*i. e.* the English) came upon Cormac O'Neill, son of Fedhlim Oge, at Rayleagh, and robbed and killed his people, namely the Clann William; thence they proceeded to *Lough-inis-olyn*, and to Moneymore, until the two forces were near one another. They collected a great deal of spoil, and the creaghts fled to Dungannon. After plundering far and near, the English returned to *Lough-inis-olyn*. They sent Rory Ballagh O'Mellan to demand the island from Shane O'Hagan, son of John, son of Edmond Oge. It was refused them. They then fired three shots from a cannon, which they had with them, and departed from the place, returning to their homes laden with spoil."

Again, on "August 25, 1643, Inis-O'Luin was garrisoned by Shane O'Hagan. The enemy came and called on them to surrender, which they refused to do. They then stopped up a stream which ran out of the lake, and turned the course of another into it, so that they contrived to flood the island. The garrison kept watch in the island house, and one of their men was killed by a cannon ball while on watch. However, they refused to surrender the island on any terms. One man in attempting to swim away had his legs broken. The enemy at length departed." The latest entry occurs under date 7th March, 1645, when "The people of O'Hagan burned Inis-O'Lynn, for want of provisions, and followed the general eastwards."*

The crannog of *Mac Navin*,† county Galway, was taken in the

* *Proceedings R. I. A.*, vol. vii., pp. 157-8.

† "*Mac Cnaimhain*, now anglicised Mac Nevin, and among the peasantry shortened to Neavin and Nevin. This family was originally settled at Crannog-Meg-Cnaimhain, now Crannagh-Mac-Nevin, in the south-east extremity of the parish of Tynagh, barony of Leitrim, county Galway, and the name is still general in that and the adjoining barony of Loughrea. The first notice of this family to be found in Irish history occurs in the *Annals of the Four Masters*, at the year 1159, where it is recorded that "Athius Mac Nevin was slain at Ardee." The crannog is mentioned in an inquisition taken at Galway on the 10th of October, 1605:—"Quod Hugo Mac Knavin, alius dictus Mac Kellie intravit in actionem Rebellionis et captus et suspensus fuit 4 Junii, 1602; et fuit seisisus in Ballilie Cranach Mac Knavin," &c. "In a grant to the Earl of Clanrickarde, dated 19th July, 1610, mention is made—among various other lands granted to him—of part of the lands of Crannach-Mac Knavin, parcel of the estate of Hugh Mac Knavin, otherwise O'Kelly of Cranagh-Mac Knavin, executed in rebellion" (a).

(a) *The Tribes and Customs of Hy-Many*. Note by O'Donovan, pp. 68-9.

year 1610; it is previously mentioned under date 1601. G. H. Kinahan, who searched for but could find no trace of this crannog, imagined its site must have been somewhere in the large alluvial flat and bog that extends south of the townland of Crannagh, in the parish of Tynagh, county Galway. This supposed site lies about four miles E.N.E. of the crannog of Ballinlough. The difficulty experienced in identifying the site is the more remarkable as the descendants of the sept of Mac Navin still reside in the locality, and the crannog was inhabited up to a very late period.* In 1603, after the subjugation of Leitrim by the Crown, "O'Rourke was obliged to remain with a small force in the woods, in the remote glens and on the islands in the lakes in his country;" whilst the same year Hugh Boy O'Donnell was conveyed by his adherents to the retirement of a crannog, to be healed of his wounds. This retreat, called "*Crannog-na-n-Duini*, in Ross Guill, in the Tuathas," was situated in the parish of Mevagh, county Donegal, between Redhaven and Sheephaven. In 1599 the crannog of *Lough Gur*, county Limerick, was taken from the "Queen's people" by the Earl of Desmond, then in rebellion against Elizabeth. Sir George Carew relates that the Lord President of Munster, who reconnoitred the crannog for the purpose of its recapture in the following year, *i. e.* 1600, observed two small islets (the crannogs) and one large island; this latter "he found to be a place of exceeding strength, by reason that it was an island encompassed with a deep lough, the breadth thereof being, in the narrowest place, a caliver's shot over. Upon one side thereof standeth a very strong castle, which at this time was manned with a good garrison, for there was within the island John Fitz Thomas with two hundred men at the least."† "After much parade in the preparation of ordnance to reduce Lough Gur, its surrender was purchased for sixty pounds from Owen Grome, who had been entrusted with its defence."‡ There yet lingers here "the reflex of a legend past," for it is supposed that beneath the waters of the lake lie enchanted the grand old castle of the Desmonds, the great earl himself, his beautiful countess, and all the retinue that surrounded him in the days of his splendour. "In one of the lakes is a small island, rocky and wooded, which is believed by the peasantry to represent

* *Proceedings R. I. A.*, vol. ix., p. 176. † *Ibid.*, vol. i. (2nd Series), p. 223.

‡ *Researches in the South of Ireland*. Crofton-Croker.

the top of the highest tower of the castle, which sank under a spell to the bottom.”*

In a plan-drawing of the siege of Enniskillen castle, in the year 1592, the remains of a crannog appear in the river close to the castle, where seemingly a circle of stakes encloses a diminutive island.”† The survey or maps of the county Monaghan, made by one Francis Jobson in 1590, though meagre, and certainly—as its designer expresses in an apologetic note to Burghley—“nothing perfect,” is nevertheless highly interesting by reason of the rude sketches of the water-laved abodes of the chiefs of Monaghan. Each barony possessed one, designated “the island”; that in Farney was at *Lisanisk*, written *Lysonske*, and it is marked on the map as “The Island, Ever M’Cooley’s house.” In the year 1843 traces of this structure were discovered; the former artificial island was then a peninsula, having been joined to the shore. Seven feet below the surface of the ground, and two feet below the water level, a double row of piles was disclosed, formed of young trees with the bark still adhering, and from six to twelve inches in diameter; the area thus enclosed was an oval sixty feet by forty-two feet.‡ In Jobson’s map several crannogs are represented in *Lough Mucknoe*, barony of Cremorne; also “Mac Mahoun’s house,” or crannog, is shown in *Lough Monnachin*. According to the same authority, a sub-chief of the present county Monaghan, named Mac Kenna, resided in a crannog either on the lake of *Glaslough* or that of *Erny* in the parish of Donagh. The map is so rough that it is difficult to decide which of the lakes is intended. Francis Jobson likewise represents the residence of a chieftain named Brian Mahon, as a crannog on *Lough Rouskey*, in the parish of Killeevan. In 1588 Aedh O’Donnell and nine of his followers were murdered in the crannog of *Mongavlin*, parish of Taughboyne, county Donegal. “The crannog is not now traceable, nor is there any water in the locality in which such a structure could have existed, with the exception of Lough Foyle, on the margin of which Mongavlin is situated.”§

* *Stories of Lough Gur*.

† Maps of the escheated counties in Ireland, 1609. Ordnance Survey Office, 1861.

‡ Shirley’s *Dominion of Farney*, pp. 93–4.

§ *Crannogs muirí gaibhlín, Magh-gaibhlín. Annals of Lough Cé*. Note by the editor, W. M. Hennessy.

In 1571 the Mac Dermots burned *Inis-Floinn* and *Inis-Mic-David*,* situated somewhere on the borders of Roscommon and Sligo. The statement that the islands were burned seems to sufficiently demonstrate their artificial character. In the sixteenth century the island fortress of *Inishrush* was held by an Irish sub-chief named Brian Carragh; and Dr. Reeves quotes a document from the State Paper Office, in which allusion is made to it in the form of a letter to a Captain Piers, dated 10th December, 1566. The writer says:—"Als mony as we migt drywe and dreafe ower ye Ban all y^e carycht y^t Brean Karriche hade . . . and ane innyse (i.e. *Island*, namely *Inishrush*), y^t Brean Karriche hade of befair and Oneiles servand tuk y^t, and now we have gotten y^e innys agane, and that harchips I behuffit to Sla yame to be meet to my arme." The crannog of *Inishrush* (i.e. the island of the wood), or perhaps, peninsula, has long ceased to bear that name. It is a small island in the middle of a marshy basin called Green Lough, in the townland of *Inishrush*, barony of *Loughinsholin*, county *Derry*. Some years ago this marsh was a sheet of water about half a mile in circumference, the drainage of which was effected by means of a deep cut that carried its contents into the *Clady* river. About the centre of the lakelet was a circular artificial mound composed of clay and gravel, the sides gradually shelving downwards. It was girt with a circle—about one hundred and fifty feet in circumference—of oak piles, most of them still in position. Horizontal beams of oak were mortised in the upper ends, and upon this framework rested seemingly the foundation of a wooden house securely attached to the supporting timbers. An artificial causeway, leading from the western margin of the lough, appears to have formerly connected the crannog with terra firma. The sole discovery made was a fragment of chain-armour. The lake basin became again partly submerged owing to neglect of the drainage, and when Dr. Reeves visited the locality in 1859, he failed to reach the crannog. It remained, however, above water, prominently covered with a luxuriant growth of grass.†

In 1560 O'Rourke was drowned "whilst going to sleep on a low sequestered crannog in *Muintir Eolius*," county *Leitrim*. Under heading of the year 1544, crannogs in the county *Antrim* are referred to in the *Annals of the Four Masters*:—"O'Don-

* *Annals of Loch Cé*.

† *Proceedings R. I. A.*, vol. vii.

nell marched with a force into the Routes, and took (i.) *Inis-an-Lochain*, on which was a wooden castle and an impregnable fortress in the possession of Mac Quillan; and after O'Donnell had taken the castle he gave the castle to O'Kane. On the same expedition O'Donnell took the castle of (ii.) *Baile-an-locha*, and he found much property, consisting of arms, armour, brass, iron, butter and provisions, in those castles. O'Donnell also took after that (iii.) *Inis-locha-Burrann*, and (iv.) *Inis-locha-Leithinnsi*, in which he likewise found much property." (i.) *Inis-an-Lochain* (*i. e.* the island of the little lake) lies in the river Bann, about a mile and a-half to the south of Coleraine. It is now called Loughan Island. The crannog had been erected, or perhaps, *re-erected* in 1170. (ii.) *Baile-an-locha* (*i. e.* the village of the lake), anglicised Ballylough, and (iv.) *Locha-Leithinnsi* (*i. e.* the lake of the half island), now known as Lough Lynch, are both situated in the parish of Billy. Lough Lynch originally covered about twenty acres, but has been drained, and the former island is now accessible by dry land. This crannog "is shown as the birthplace of Colkitto, a chief who figured in Montrose's wars," and who has found a place in Sir Walter Scott's "Legend of Montrose," as well as in one of Milton's sonnets, written on the critics who cut up the title of his book "Tetrachordon:"—

" ' Bless us ! what a word on
A title-page is this ! ' And some in file
Stand spelling false, while one might walk to Mile-
End Green. ' Why, it is harder, sirs, than Gordon,
Colkitto, or Mac Donnel, or Galasp. '
These rugged names to our like mouths grow sleek
That would have made Quintillian stare and gasp. "

Colkitto's real name was Alexander MacDonnell, a relative of the Earl of Antrim. (iii.) *Inis-locha-Burrann* was situated in the parish of Ballintoy; the lake is now drained, and the place known by the name of Loughavarra.*

In 1541 the eastern crannog in the lake of Glencar, on the borders of Sligo and Leitrim, was taken by one sept of the O'Rourkes from another. Shortly afterwards the dispossessed proprietor attempted to set fire to the "fortress," but was

* *Ulster Journal of Archaeology*, vol. vii., pp. 192-3.

discovered, pursued by boats, taken prisoner, and hanged. In the summer of 1540, O'Donnell besieged the crannog of *Loch Betha*, now Lough Veagh, county Donegal. He encamped round the lake shores, but failed to take the stronghold. In the autumn he, however, defeated his opponents, and "broke up and completely demolished the crannog." Previous mention is made of it as the scene of strife in the year 1524, when Eoghan O'Donnell took Niall O'Donnell's "town" (*i. e.* the crannog of Loch Betha); whilst in 1257 O'Donnell was confined to this crannog during twelve months from wounds received in a battle near Sligo. In 1512 the crannog of Mac Gauran was taken by Mac Guire. In 1495 Mac Gauran, a chief of Tallaghaw, in the present county Cavan, was drowned in *Loch Crannoige* of *Coill-an-mhuilinn* (*i. e.* Lake Crannog of the Wood of the Mill), now Ballywillen Lough. In 1477 a violent tempest swept over Ireland which did great damage, especially to crannogs. Had these structures not been very numerous, the chroniclers would scarcely have drawn special attention to the havoc thus wrought. In 1455 Torlogh Mac Guire took and plundered the crannog of Mac Clancy on Lough Melvin, county Leitrim. In 1452 O'Hanley was murdered by his own tribe in the crannog of *Loch-Leisi* (stated by O'Donovan to be now called Muckenagh Lough), in the parish of Kilmeam, county Roscommon; whilst in 1246 it is of record that O'Conor made his escape when a prisoner from the same lake-dwelling, after drowning his guards. In 1368 an O'Conor was taken prisoner in the crannog of *Ardakillen*, parish of Killukin, county Roscommon, and in 1388 another O'Conor burned this crannog and the Island of *Loch-Cairgin* (*i. e.* Cargin's Lough*), near Tulsk in the same county. In 1365 Brian Mac Mahon, chief of Oriel, invited his father-in-law to a banquet, where he made him prisoner, and "put him in a lake to conceal him"†—evidently meaning his confinement in a crannog—for Mac Geoghegan states that the captive was committed "to a strong place on a lough to be kept." In 1247 Mac Costello took and garrisoned the crannog of *Cloonloch* (now Lough Clean), county Leitrim, and expelled the proprietor, Mac Rannall, who, however, succeeded in recapturing his stronghold.

* The townland of Cargin is situated in the parish of Ogulla. The lake is mentioned in the *Annals of Loch Cé*, A.D. 1092.

† *Annals of Loch Cé*.

In 1223 William de Lacy, one of the great Anglo-Norman settlers in Ireland erected "the crannog of *Inis-Laodhachain*, and the Connacht men entered forcibly upon it, and let out on parole the people who were in it." This erection of a lake-dwelling by a Norman baron is an instance of the habit laid to the charge of many of the English, of forsaking their own language and usages, and of living according to the manner of the Irish amongst whom they dwelt. "The names *Inis-Laodhachain* and *Loch-Laodhachain* are now obsolete." In 1220 "Walter de Laci came to Erin, and performed a great hosting to the crannog of O'Raighilligh.* He went upon it and obtained hostages and great power." The crannog here referred to "appears to have been situated in Lough Oughter, county Cavan, where the old castle of Cloch-Uachtair (or Cloch-Oughter) now stands. In a letter from Guy de Châtillon to Henry III., dated July, 1224, Grennoch Oraely (as the name is therein written) is stated to have been captured from William de Lacy by Oraely, Walter de Riddelsford, and Richard Tuit, on the same day on which the castle of Kilmore (county Cavan) was taken, from which it appears to have been in the neighbourhood."

There is evidence that some crannogs were constructed by the Northmen, for in 1170 the chief of a small territory in the barony and county Monaghan "was killed by the men of a fleet which came from the Orkneys, in the island which had been constructed by themselves in *Loch-Ruidhe*, i. e. *Inis-Lachain*." There is no lake in Ireland now known by that name; but to the south of Coleraine there is a small island in the river Bann called "the Loughan," which bears all the appearance of having been artificially constructed.† In 1150 an Irish chief was killed "on the island of *Loch-Laighaire*." This crannog lay in the country of the "*Sliocht O'Neills*," and, as appears from subsequent references, was situated to the south of Lifford, in the barony of Clogher, county Tyrone, and was the residence of that branch of the O'Neills.

* *Annals of Loch Cé*. Note by W. M. Hennessy. This is doubtless the place (then in possession of Cathal O'Raighilligh) against which O'Donnell led a great hosting in 1281; "and they brought vessels with them upon Loch Uachtair and plundered Eo-innis." Again, in 1369, a naval expedition was made by Philip Mac Udhir to Loch Uachtair, and Cloch Uí Raighilligh was taken by him, and Philip O'Raighilligh, "King" of Brefne, who was imprisoned therein, was taken out of it.

† *Ibid.*, vol. i., p. 143.

It is written *Loch-Laoghaire* and *Loch-Laighaire*, i. e. Leary's Lake, said to have been so called from "Leary the Victorious," one of the heroes of the Red Branch Knights of Ulster, in the first century; but for nearly two hundred years it has been generally known under the designation *Corcreevy*, i. e. wooded hill. In 1845, when the water had been drained off, the crannog was here discovered. There are several allusions to it in the Irish Annals. In 1325 "O'Donnell, the son of Brian O'Neill, Lord of Tyrone, died at Loch-Laighaire. In 1431 Nachtan O'Donnell went to assault the castle of Loch-Laighaire, and took it from Turlough O'Donnell, and all the spoils that were in it he carried off." In 1436 the crannog had been seized by the O'Neills, when some of the same sept summoned Mac Guire to their assistance and "commenced constructing boats to go to the crannog, but the sons of Bryan, who were then in the crannog, came to the resolution of delivering it up." In 1500 Hugh Roe O'Donnell "burned the crannog of Loch-Laighaire;" whilst in 1509 there is a notice of a fight between two septs of the O'Neills on the shores of the lake.

In 1025, it is stated in the *Annals of Loch Cé*, that a predatory expedition was made by the inhabitants of Fermanagh, on which occasion they burned the crannog on *Loch-n-Uaithne* (Lough Ooney), "and slew seventeen men on the margin of the lake." Lough Ooney lies in the county Monaghan, in the barony of Dartry, the chiefs of which territory had their principal residence on this lake, whence they were sometimes designated "Lords of Loch-n-Uaithne."

In the enumeration of various kinds of fortresses repaired by Brian Borumha, crannogs are included, as recorded in a well-known Irish ms. entitled "The Wars of the Gaedhiel with the Gaill." In it mention is made of four crannogs, one being near Knockany, county Limerick, and situated in *Lough Cend*, now drained; also the celebrated crannog in *Lough Gur*, in the same county. The site of the crannog of *Loch Saiglénd* has not been identified;* the site of *Inis-an-ghaill-duibh* (i. e. the island of the black foreigner or Dane,† is unknown, or at least uncertain; however, in the Dublin copy of the *Annals of Innisfallen*, under date 1016, it is stated to

* Could it be Inis-Sgeillend?

† *sa ghaill duibh* . . . *ocur inir locha Cend, ocur inir locha Saip* . . . *ocur inir locha Saiglénd, ocur inir in gail duibh.*

have been situated in the river Shannon. We learn that in some of his numerous conflicts with the Danes, Brian Borumha pillaged various *islands* in the Shannon, where the invaders had placed their women and children for safety, as well as their treasure, as "there was much gold and other wealth in these islands and fortifications." In 990 a violent tempest "sunk the island of *Lough Cimbe* (now Lough Hackett) suddenly, *dreach* and rampart, *i. e.* thirty feet;" this crannog was afterwards rebuilt by Brian Borumha.

With the Danes, the struggle in Ireland between invaders and invaded was carried on as much in the lakes and rivers as on terra firma. Of the importance attached to crannogs during this contest many instances might be given, but a few will here suffice. In 984 "the islands of Connaught were destroyed by these marauders." In 933 the crannog of *Lagore* in Meath was burnt by them; whilst in 848 they fired and dismantled it. *Lagore* being the residence of one of the principal chiefs of Meath, frequent notices of it appear in the annals, where it is written *Loch-Gabhar*. "*Gabhur* is an ancient Irish and British word for a horse, and accordingly the name *Loch-gabhra*, which occurs in the life of St. Aidus, is translated *Stagnum-equi*, the lake of the horse,* now euphonized "*Lagore*." In 967 Beollán, "king" of this place, died; in 907 Maelogra, also "king" of *Lagore*, was slain; whilst in 868 the son of Edirscel, "king" of *Lagore*, fell fighting against the Danes. In 865 Tighernach, "king" of *Lagore* and "half-king" of Meath, died; and in 856 Cinaedh, chief of the present baronies of Upper and Lower Duleek, in Meath, in alliance with the Danes, "spoiled the islands" of *Lagore*. This entry is of great importance, as it points to the probability of the site of another crannog or crannogs in close proximity to the celebrated historical stronghold dug out of its peaty covering in 1847, and which as early as A.D. 673, must have been of importance, for in that year a considerable battle took place on the shores of the lake. In 927 and 928 the Danes plundered "the islands of Lough Neagh," and in 922 the same fate befel "the islands of Lough Rea."

In 847 "the island of *Inis-Muinremhar*," in Lough Ramor, county Cavan, was "demolished by the inhabitants of Leyney, county Sligo, and Gallen, county Mayo, who were plundering

* *Irish Names of Places*, p. 475. P. W. Joyce.

the territories after the manner of the Gentiles.”* In 636 a chieftain named Maelduin was burned to death in “the island” of *Inishkeen*, county Louth, on the borders of Monaghan,† and in the same year mention is made in the *Annals of the Four Masters* of “a lake in which a crannog was built, situated in Oriel (but not now known), called *Loch-da-damh*, the lake of the two oxen.”‡

There is an ancient poem in Irish,§ attributed to St. Columbkille, which commences—

“Alone am I on the mountain.”

The Saint is flying from his enemies after the order of banishment from Erin had been issued against him: he subsequently exclaims—

“Though even in a church, the reprobates are slain;
Though in an island, in the middle of a lake,
The fortunate of this life are protected,
While in the very front of battle
No one can slay me.”

A well-known Irish scholar, the Rev. Canon Bourke, gives the following translation of the same passage:—

“If by six thousand I was guarded,
Or placed in islet in a lake,
Or in a fortress strong protected,
Or in a church my refuge take,
Still God would guard His own with care;
And even in battle safe they fare.
No man can slay me till the day
When God shall take my life away.”

There is said to be an ancient *Life of St. Patrick* which contains a notice of one of those dwellings; and in a translation into English of an ancient Irish ms., the “Pursuit of Diarmuid and Grainne”—two characters belonging to the earliest, indeed generally supposed mythic, period of Irish history—Fionn and Diarmuid

* *Chronicon Scotorum*.

† Δοιη Γρηγορ, πέ έέο Γρηγοχα Δρε . . . μαδουμ, μαε Δουδα το λορεαδ
: niniy caom. In the *Annals of Ulster* this chieftain's death is under date 640.
“Combustes Maelduin in insula Caini.”

‡ *Irish Names of Places* (1st Series), p. 258. P. W. Joyce.

§ *Miscellany of the Irish Arch. Society*. Translation and notes by O'Donovan.

are represented as addressing each other, and the one calls to mind that Miodhach the son of Colgan, "had a Bruighean upon land, and a Bruighean *upon the wave*" (*i. e.* an island). The word Bruighean means a palace. The island upon which this structure stood was, according to the text, situated upon the Shannon, and was approached by a "ford."

Thus can be clearly traced a continuous historical occupancy of these structures until all written record of them ceases, and their origin is lost in the mists of antiquity: enough proof has been advanced to show that crannogs existed, as may be fairly surmised, from the first colonization of Erin. In the most diverse climates "water towns" seem to have sprung up independently, by virtue of the natural laws which govern man's action in a semi-civilized state—

"Facies non omnibus una
Nec diversa tamen, qualis decet esse sororum."

The continuance in Ireland of this very primitive form of habitation was doubtless prolonged in consequence of the restless internecine feuds and generally unsettled state of the country. However, the "silver streak" around the island homes of Ireland's early inhabitants was not always a secure barrier; during severe winters, when the water was sufficiently frozen, it no longer presented an obstacle, but on the contrary was of considerable assistance to marauders. In the native chronicles most notices of crannogs are connected with scenes of strife, the island of the weaker party being usually given to the flames. A disturbed state of society up to a very late period was also characteristic of the sister kingdom of Scotland, and the antiquarian and poetical genius of Sir Walter Scott brings the feuds of the past before the eyes of the modern reader. The scene wherein the Lowlanders or Saxons fruitlessly essay to reach the island on Loch Katrine, where the Highlanders or Celts had placed their women, children, and goods for safety, had most probably its foundation in some real occurrence. In his *History of the Rise of the Dutch Republic*, Motley traces the gradual development of what is now the kingdom of Holland, from a race of ichthyophagi who dwelt upon mounds which they raised like beavers above the almost fluid soil, but whether there ever was in Erin a period purely lacustrine, or to what extent villages on terra firma may have co-existed, is a problem that will

most probably never be solved. From careful examination, however, of the "finds" in lake dwellings, the conclusion may be drawn that civilization in Ireland, from the earliest dawn, has been on the whole steadily progressive, for

"... I doubt not through the ages one increasing purpose runs,
And the thoughts of men are widened with the process of the suns."

There is something in the continuity of these successive ages that may be considered analogous to the connecting links of a chain. The Palaeolithic, or rude stone period; the Neolithic, or polished stone age, as well as the Bronze age, in all probability overlapped more, and had a longer continuance, than elsewhere in Europe. But the mere fact of the discovery of stone implements, particularly as in Ireland, in a stone-producing country, is not necessarily proof of a barbarous state of society, for, as remarked by the Duke of Argyll, the remains of the first Chaldean monarchy plainly demonstrate that a high state of civilization co-existed with the use of stone implements of a very rude character.

END OF PART I.

LAKE DWELLINGS.

PART II.

DESCRIPTION

AND

GEOGRAPHICAL DISTRIBUTION

OF

ALL KNOWN LACUSTRINE SITES IN IRELAND,

WITH AN ACCOUNT OF

THE ANTIQUITIES DISCOVERED IN OR AROUND THEM.

PROVINCE OF ULSTER.

COUNTY ANTRIM.

Lough Ravel (otherwise Derryhollagh).—This name is but a modern corruption of the ancient form, found in the Inquisition of 1605 to be in the district of the “Feenagh”:—“Est in eodem tuogh quidam lacus vocatus Loughdireare in quo est insula fortificata.” The site of this crannog, lying between Toomebridge and Randalstown, is known to the country people as “the island” in Aghaloughan bog; it seems to have been entirely artificial, constructed on oak piles driven into the bed of the lough, and bound together by horizontal beams of the same timber mortised to the piles. The interior was filled up with wood and earth, thus forming an island of about twenty-eight yards in diameter; and beyond this, at the distance of some six or eight yards, there still remain several oaken piles, probably traces of an outer stockade. On the crannog were stone hearths with marks of fire on them, and partially within the enclosure was a very perfect single-piece canoe of oak, twenty feet nine inches long, by four feet seven inches broad, the sides twenty inches deep. In the island and its immediate vicinity were querns, several wooden and copper dishes, daggers and spear-heads of bronze, iron celts, and stones with holes perforated in them; also some articles seemingly intended for ornamental purposes, and others of strange shape, regarding the use of which no conjecture can be formed. These “finds” have been sold from time to time to various collectors. At a short distance from the island, and twelve feet below the surface of the bog, was brought to light in the summer of 1856, a pan-shaped circular vessel of thin hammered copper, twenty-two inches

in diameter, and eight inches in depth; it is now in the Belfast Museum, and a label attached to it states that a few years previously a similar one had been found nearer to the island; and in 1859 another vessel of small size, made of hammered copper, was discovered in the same locality. A bronze needle or bodkin, three inches long, with the eye quite perfect; a narrow iron hatchet, eight inches in length, and one and a-half inches wide at its cutting edge;* a bronze pin of unusual form, ornamented with two human heads (*ante*, p. 109, fig. 126); two bronze fibulæ (*ante*, p. 118, figs. 147 and 148); undressed flint flakes (*ante*, p. 58, figs. 12 and 13); the glass beads figured (*ante*, p. 124, figs. 168 and 169); and a beautifully designed silver brooch (*ante*, p. 121, fig. 157), were found in this crannog.†

Loughmagarry.—The townland of this name is in the parish of Craigs, barony of Toome lower; it contains within it a low-lying piece of land, the former bed of a lake that was drained towards the close of the last century. The present name bears no resemblance to its designation in the Inquisition of 1605,‡ but it has been identified as the same by Dr. Reeves; the large townland which adjoins it on the west, and of which it appears to have been formerly a sub-denomination, is called Feenagh. The Loughinche-feaghny of the deed of 1605 is a compound word, signifying—according to the above authority—"the lake of the island of Feenagh," but perhaps may be interpreted the island of Fiodhnach, *i. e.* the wooded place. The crannog stood close to the shore of the lake near its western margin, where the bank rises abruptly

* *Museum, R.I.A.*, No. 259.

† Also the following articles: a circular stone not unlike the upper stone of a pot-quern; it was perforated in the centre, and decorated at the top. A small whorl of red grit, and a water-worn pebble that may have been used as a net weight or sink-stone (*a*). A whetstone, four inches long (*a*). A curved stone, five inches long, bearing on it some rudely carved devices (*a*). A celt-shaped, smooth, flat stone, about six inches in length, evidently a natural formation (*a*), and much resembling the modern polished stone used by linen weavers as a "rubbing-stone." Two fragments of pottery, exceedingly rude, one of them unglazed (*a*): the first is portion of a small pipkin, between three and four inches wide, and two and three-quarter inches high, with an indented band round the top; it bears marks of the long-continued action of fire, and is in composition very like a cinerary urn.

‡ Et est in eodem le tuogh quidam lacus alias stagnum vocatus Loughincheafeaghny in quo est insula similiter fortificata.

The articles marked (*a*), appear in *Museum, R. I. A.*, as Nos. 36, 67, 128, 84, 30, 31, 10 and 11.

from the hollow ; it is now a mere gravelly knoll, but the country people recollected seeing it surrounded with an external framing of oak posts, the interior filled in with gravel and clay. Several curiosities (now dispersed) are said to have been found in it.*

Loughtamand, or Loughtarmin.—In the townland of Lisnahunshin, parish of Craigs, barony of Toome lower, and four miles N.W. of the village of Ahoghill, a crannog became apparent about 1849, when the lake was drained. According to the description given by labourers employed in the operations, a kind of framework, consisting of oaken beams in a good state of preservation, was discovered, entirely surrounding an island. Local tradition assigns this stronghold to the sept of the Mac Quillans, and being situated on the boundary of the districts of Dalaradia and Dalrieda, it afforded great security as a place of retreat, after marauding expeditions—a recommendation that in ancient times would render it a position of considerable importance. Its site was identified by Dr. Reeves as the “Loughtoman” mentioned in the Inquisition of 1605: “Est in eodem le tuogh quidam lacus sive stagnum vocatum Loughtoman in quo est insula fortificata.” The lough is bordered on the east and south by traces of bog, and enclosed on the north and west by hills three in number, from two of which the country slopes down with a regular fall to the river Bann. Between the hills on the north and north-west there is a considerable depression, and at this point a small stream flowed, carrying off the surface water, and which stream, being deepened, served as a drain for the lough. Before the withdrawal of its contents, about fifty acres were submerged, the water varying in depth from seven to ten feet. In the year 1820 the lough was drained by Lord O’Neil, but from after neglect the water once more accumulated in the hollow ; it was, however, again drained, and is now under pasture. On the east side the banks of the bog which formed the margin were from twenty to thirty feet in perpendicular height, the outline of the basin being thus well defined ; it was of irregular oval shape, and about a mile in circumference. The island itself, of circular form, and seventy yards in diameter, was situated almost in the centre, though somewhat nearer to the north and east sides ; it was visible even before the drainage, and on it was a stone house. In the draining operations the main cut

* *Proceedings R.I.A.*, vol. vii., pp. 156–7.

was carried across the long diameter of the lough from south-east to north-west, passing through the middle of the island, where the workmen came upon oak piles. These piles—from seventeen to twenty feet long, and from six to eight inches thick—were driven into the bed of the lough, and projected five or six feet above it; they were bound together at the top by horizontal oak beams, into which they were mortised and secured by stout wooden pegs. Above the top of these piles there was a depth of three or four feet of earth, and it was only when the earth had been removed from time to time that the wooden structure became apparent in its integrity. The piles—twenty-six in number—were arranged in a circle of about fifteen yards in diameter in the centre of the island, and just under where the stone house stood. It was stated that a few feet below the present surface of the bed of the lough a paved causeway of stone, about five feet broad, led from its western margin across to the island, which is now reduced to the level of the surrounding ground from the effects of cattle tramping over it, and persons digging down in search of treasure. The horizontal beams were removed and used for various purposes; the drain formed a tangent to the circle of piles touching it on the east, where some of them were dragged up on being laid bare. A single-piece oak canoe, in tolerable preservation, was discovered about thirty yards from the island on the north-west side, and from time to time the following articles were found in it: metal dishes; small axe-heads; two iron swords; a small anvil; a pair of scales; many small hammers; “several gold pins;” an iron cauldron of low dilated shape, and a stone yellowish-white in colour, beautifully polished, about twelve inches long, three and a-half inches broad, and two inches thick, accurately squared at the sides, having at each end a round hole one and a-quarter inches deep, and a-half inch in diameter, the top surface and one of the sides being covered with carved devices. Lord O’Neil obtained the swords; the anvil, scales, and hammers, were sold for trifling sums to an itinerant dealer; the iron cauldron was in use as a potato pot, and the polished stone was given by the finder to a friend as a “rubbing-stone” for his web.*

Kilknock.—In the Ulster Inquisition sped at Antrim on the 12th July, 1605, which still remains of record, it was found,

* *Proceedings R I.A.*, vol. vii., p. 155.

amongst other things, by the jury, “*Et quod est infra metas et bundas ejusdem le tuogh quoddam stagnum vocatum Lougherne-gilly in quo est insula fortificata.*” Although that name is now obsolete, yet Dr. Reeves, after careful research, succeeded in identifying it with Kilknock lough situated in the north-west corner of Drummaul, in the townlands of Kilknock, Ballybollen, and Gil-listown. In former times this lake covered fifty acres, but it was drained about the close of the last century: by this means the crannog was brought to light, and the oak piles on which it was constructed were exposed to view. It is described as of nearly circular shape, sixty feet in diameter, and on it were the remains of a wooden hut, constructed of oak beams; these timbers were removed, and some of them utilized as roofing material for a neighbouring barn. A canoe was found (at the same time) in the lough. Owing to a dispute, which afterwards arose, as to the ownership of the drained land, the outlets of the water were allowed to close up, and in consequence a considerable portion of the former lake had become again submerged. The island could be reached by wading, but was distinguishable from the rest of the marsh only by its greater firmness. Over the tops of the oak piles—said to be about two feet in diameter—was a considerable depth of soft boggy matter, and a paved causeway, covered eight or nine feet deep, led down to what used to be the edge of the water. The bog around the lake, thickly studded with trunks of oak, varying from one to three feet in diameter, prove it to have been at some remote period the site of an extensive wood.*

Randalstown.—The large crannog in this locality appears to have been formed with very heavy beams laid horizontally, but its condition when discovered must render any account of the original construction quite conjectural. The island is said to have been formerly occupied by a sub-chief of the O’Neils; the lake in which it stood was long since drained, and a peat-moss now occupies the place. Many articles discovered in this crannog are now dispersed; they would seem to have been of all ages, and to have been deposited at varying intervals of time: a stone hatchet of rather diminutive size, but in shape neither remarkable nor uncommon, was probably the most ancient relic, and the most modern was a base coin of Philip and Mary. The surrounding

* *Proceedings R.I.A.*, vol. vii., p. 154.

bog has yielded up not merely several fragments of canoes, but also some in an entire state. One of large size, and quite perfect, was (in 1860) exhumed from a depth of sixteen feet of peat: when first raised it retained its original shape, but from drying and atmospheric exposure it soon warped and became shapeless. The length of this canoe was about twenty feet by four feet wide at the stern, and three feet at the stem; from thence for about two-thirds of its length it was formed out of a single log, the stern end being composed of thick short planks well fastened with strong wooden pegs. In the bottom was a neatly made paddle of oak, three and a-half feet long (plate xxxiii., No. 3); beside it lay a wooden bowl that would contain about a quart; it had been hollowed out of a single piece of wood, and its sides were thick and rough (plate xxxiii., No. 5). Later on another canoe paddle of oak was discovered measuring three feet in length (plate xxxiv., No. 3). A good idea of the importance of this stronghold may be formed from the number of tools and appliances found in it for carrying on the ordinary business of every-day life, such as the tongs and supposed anvil of the smith—the latter a rough lump of iron somewhat smoothed on one side, and weighing fifty or sixty pounds—many crucibles, one unused, but several greatly worn and burnt, the most perfect specimen being about the size of a hen's egg; a netting-needle of iron; a battle-axe, such as was borne by the ancient gallowglasses; a very small sock of a plough (plate xxxiii., Nos. 25, 6, 7, 8), and an iron lamp (plate xxxiv., No. 2).*

* There were also shears of various sizes; two well-formed needles of bronze; a shoemaker's awl with blade of bronze and handle of stone; several axes or hatchets; a light spade of wood tipped with iron; an iron sword; a horse-shoe of ordinary size, thicker at the outer edge and without raised heels, but drawn out at the extremities to a great length; many whetstones; knives, very narrow and sharp at the point, but thick on the back; a bronze dish much scored, its diameter fifteen inches, including the rim; a wooden scoop; a large bead and small crescent-shaped piece of glass, which bore marks of having been set as a jewel; several pins of bronze, iron, bone, and wood, varying greatly in shape; the fragments of pottery were evidently the remains of strong, well-shaped vessels; the bones and horns of mammalia were principally those of oxen (of short-horn species), sheep, goat, deer, and dog; there were tusks of the boar, and in one instance the skull of a *Cervus Elephas* showed that the horns had been sawn off. In the museum of the College of Surgeons, London, is preserved the skull of an Irish deer from which the horns had been similarly cut, and it is said to have been found in that state in the west of Ireland.—*Journal Royal Hist. and Arch. Asso. of Ireland*, vol. iii., pp. 86, 90; vol. iv., pp. 36, 38.—E. Benn.

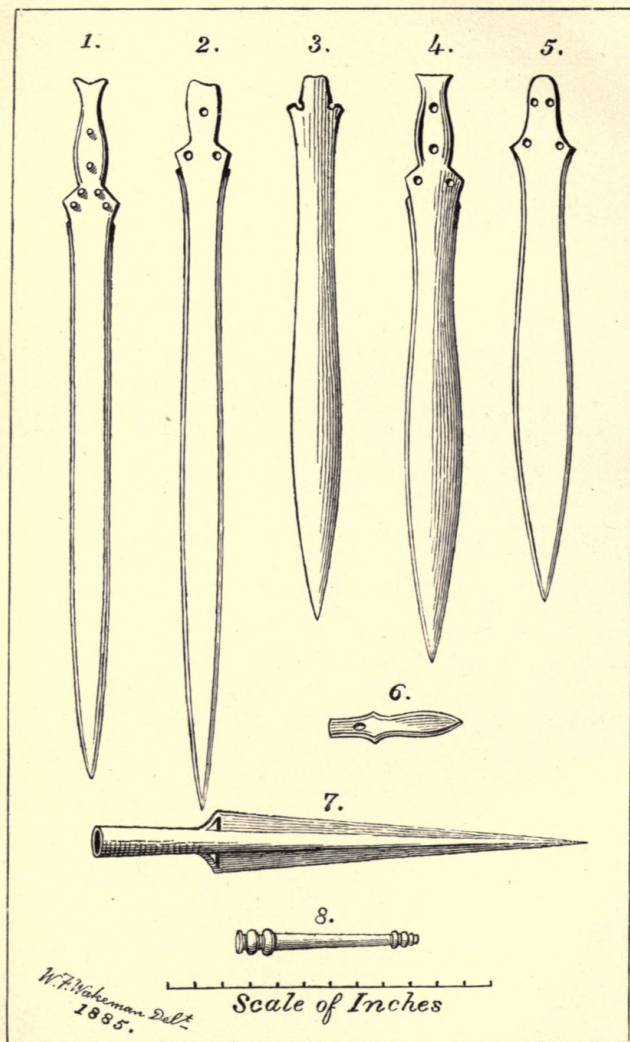
Ballymena.—At a distance of about four miles from this town, and near Cloughwater, the site of a crannog was discovered in the middle of a bog, formerly the basin of a lake, that had been filled up by peat, which had grown to such an extent as to entirely bury the island dwelling until laid bare by turf-cutters. Seemingly the crannog was not of great size, neither did it contain objects of special interest in themselves, their peculiarity being that instruments of iron and stone were found in company, also a bronze pin and several fragments of crucibles, together with remains of the fuel used. A pointed and socketed iron instrument (plate xxxiv., No. 1); two small flint knives; a stone celt; a round flat stone, two inches in diameter, having an oblong indentation on either side; and several pieces of rude pottery, bearing marks of fire, were amongst the articles brought to light.

Lough Guile.—In the parish of same name, and on the site of a crannog situated in a bog, are said to have been discovered two bronze knives, and with them a bronze instrument, six inches long and very sharp in the point (plate xxxiv., figs. 8 and 7); and on the same plate, fig. 6, is a flint knife, the form rather unusual: there were several of the articles commonly called “spindle-whorls,” some of lozenge shape, but most of them round; one was composed of jet, having indentations on it as for a thong or string. No description of the special formation of this crannog is recorded.*

Toome Bar.—In 1864 Robert Day, junior, gave the following interesting description of sites of crannogs in this neighbourhood. The bridge which spans the river at Toome forms a connecting link between the counties Antrim and Derry. At this place Lough Neagh presents the appearance of a great V, having the space between the points filled with a sand-bank, known as Toome bar, and which is almost invariably covered with from two to three feet of water. Barton, who published a work on Lough Neagh in 1751, states that before the autumnal season the water discharged at Toome was so very inconsiderable as not to afford a depth greater than that which may reach to the ankle or the knee of a person wading, and that on one occasion a man, taking advantage of an inblowing wind, walked over dryshod. Strewn upon the bar, and imbedded in it, were logs and barks of timber, some

* *Journal Royal Hist. and Arch. Asso. of Ireland* vol. i., pp. 20-2.—E. Benn.

bearing the marks of fire, while others still retained their upright position. They must have been placed there artificially, as the bar of sand extends a quarter of a mile into the lake, outside of which there is deep water, and if it were by the force of the water they had been thrown up, it is equally probable they would have been swept away by the first flood. From this it may be inferred that there was on the spot, at a very remote period, a crannog or lacustrine settlement. The large number of flint weapons found on the surface, or imbedded in the sandy bottom, renders it more than probable that they had been in use by the dwellers in this island village. Flint is not found within seven miles of Toome, so that it must have been carried to and manufactured in the crannog. The most conclusive proof of their having been made on the site was furnished by the presence of the large cores of flint from which the weapons had been struck. Two rudely-shaped, barbed spear-heads were here obtained, and four celts of the ordinary type, made from the trap rock, two of them polished, but the others were made with less care, the edge alone showing signs of careful working. Antiquities of great variety belonging to the stone and bronze periods were found at the time the river Bann was deepened; these were deposited in the Museum, R. I. A. All the good specimens, evidently designed for special purposes, and to which had been given certain and definite shapes, were made out of rocks characterised by possession of all the essential qualities needful for such articles; whilst the rude, ill-formed implements were composed of shale, slate, schist, grit, or any other stone which presented itself within reach. The greater number of the flint weapons were formed by not more, probably, than three or four skilful strokes, thus: one would strike the fragment from the core, two more would form the midrib giving it a leaf-shape, and a fourth stroke would cause the slight depression at the base intended to secure the weapon to its shaft or handle. These opaque flint flakes, of the largest size and honey yellow in colour, were found six feet under the bed of the river Bann, lying with several others and a stone celt "in one mass on the old or former gravel-bed of the river, not far from Toome Castle, on the county Antrim side." At Toome were found also the bronze weapons figured plate xxxvii., in which No. 1 represents a sword in a perfect state, having the point worked down below the level of the blade, for about four inches; it has a broad handle-plate, cleft for pommel, with six rivets still in position; it



Bronze Weapons from Crannog sites on Toome Bar.

is $25\frac{3}{8}$ inches long and $1\frac{1}{8}$ broad. No. 2 is a complete blade, but the handle-plate is defective; it is brazed in two places, only half an inch asunder, the line of junction being scarcely discernible; it is bevel-edged, has hilt notches, four rivet-holes, and is $26\frac{1}{2}$ inches long, by $1\frac{1}{4}$ broad. No. 3 is a plain blade, slightly corroded, and wanting part of handle; its length is $19\frac{1}{4}$ inches, by $1\frac{3}{4}$ broad. No. 4, *ibid.*, perfect, feather-edged, slight hilt notch, four rivet-holes in handle-plate, 21 inches long, by $1\frac{3}{8}$ broad. No. 5 is a leaf-shaped blade, 19 inches long and $1\frac{7}{8}$ wide at broadest part: this weapon is from the crannog of Bohermeen, county Meath, and is here given for purpose of comparison. No. 6 is a perfect knife-shaped dagger, grooved in casting; slight raised notch on handle-plate, and $4\frac{3}{4}$ inches in length. No. 7 is a perfect specimen of the long narrow spear-head; it has straight edges, loops at angle of slender socket, broad bevelled edges, and is $16\frac{1}{4}$ inches long, by 2 in. broad at base. No. 8 is a thick, short, cast bronze spear-handle, with bulbous extremities, $6\frac{3}{4}$ inches long, and it "still contains a fragment of the ancient shaft." This relic points to a close intercourse between the north of Ireland and Scotland, for in their wars against the Romans, A. D. 208, the Caledonians had, amongst other weapons of offence, a spear of peculiar construction, "having a brazen knob at the end of the shaft, which they shook to terrify their enemies."*

Lough Mourne.—The waters of this small lake, situated upon a hill about 600 feet above the level of the sea, and three miles due W. of Carrickfergus, were temporarily drained off in the summer of 1882, to enable the engineers of the water-works to carry

* *Celtic Scotland*, vol. i., p. 83.

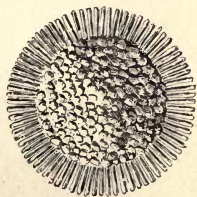
The remaining bronze weapons from Toome Bar, now in the Museum, R. I. A., are therein numbered as follows:—No. 1, a long and perfect leaf-shaped sword-blade, narrow above the handle, and with a central midrib; no side bevel, broad edges to handle-plate, which had been probably covered with gold; there is a longitudinal perforation instead of rivet-holes; length $26\frac{1}{2}$ inches, by $1\frac{5}{8}$ broad in the widest part of the blade. No. 2 is also in a perfect state. No. 3 has a plain, smooth blade, with a slight rib within margin, hilt cleft, nine holes in handle-plate; $24\frac{3}{8}$ inches long, by $1\frac{5}{8}$ broad. No. 4 is composed of bright Dowris-coloured metal, smooth and narrow above handle-plate, which has four perforations; the length is $23\frac{3}{4}$ inches, by $1\frac{3}{4}$ broad. No. 10 has an imperfect handle, notched for hilt, bevel edge, six rivet-holes; length 20 inches, by $1\frac{3}{4}$. No. 122 is a small sword, rapier blade, narrow handle-plate; 16 inches by $1\frac{3}{4}$. No. 147 is a rapier-shaped dagger-blade; wants point, has two rivet-holes, one rivet still in position; $8\frac{5}{8}$ inches in length.

on their operations ; and, when the level of the lake had been lowered ten feet, a number of artificial islands were exposed to view. There was a *group* of crannogs consisting of four islets erected on one common pile foundation, and at some little distance there was a *solitary* crannog. The group was formed of some hundreds of piles, four or five inches in diameter, with a cross timbering of branches of various sizes upon a thick layer of heather and moss. Upon this the four islets were built of boulder-stones to form the floors of the wooden houses the piles generally retained their bark, and were mostly of pine, willow, and ash, with occasionally some of oak ; they were rudely pointed on one side only. Many of the stones bore traces of fire, and had evidently formed part of the hearth ; a piled causeway, one hundred yards long, led part of the way to the shore ; the interior was filled with heather and moss. The single crannog lay somewhat farther from the shore, and in deeper water than the others ; greater skill, too, appears to have been displayed in its construction. The lowest course (see section, plate xxxviii.) was composed of large stones, whose exact depth could not be ascertained owing to a strong spring of water which flowed up between them ; upon this was a layer, two feet thick, of moss, which time and pressure had converted into peat. Upon the moss were radiating timbers, the outer ends of which rested on and were notched or mortised into piles disposed in several rings round the island ; these piles and cross timbers were larger than in the composite crannog, and many of them were of oak. Upon the timbers was a layer of heather and brushwood, upon which rested the stones forming the floor of the hut : in this case there was no causeway to the land. The relics discovered were not numerous, but the soft, almost liquid nature of the mud rendered a thorough search almost impossible. There was found about five feet of the prow of a "dug out," and, in addition to charcoal and bones in considerable quantity, there were two small stone crucibles, calcined flint flakes, several fossil sea urchins from the chalk, worn smooth by having been carried about as ornaments or charms ; a small stone with a hole in it—possibly also a charm—and a pair of "rubbing-stones."* In mid-summer, 1884, a very fine canoe of oak, found entire in the bed of

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), pp. 177, 194-5.—W. T. Lockwood.

CRANNOGES, LOUGH MOURNE.

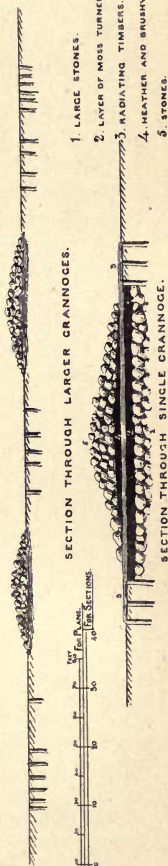
EXAMINED AUGUST 1882.



PLAN OF SMALLER SINGLE CRANNOGE.



PLAN OF FOUR LARGER CRANNOGES.



SECTION THROUGH LARGER CRANNOGES.

SECTION THROUGH SINGLE CRANNOGE.

1. LARGE STONES.
2. LAYER OF MOSS TURNED TO PEAT.
3. RADIATING TIMBERS.
4. HEATHER AND BRUSHWOOD.
5. STONES.

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this lake, was presented to the Field Club by the Water Commissioners, and has been by them lodged in the Belfast Museum.



Fig. 198.—Dug-out Canoe found near the Crannog of Lough Mourne.

This canoe appears to have been shaped chiefly by the axe; it is hollowed out of a single trunk, is twelve feet eight inches in length, and two feet six inches in width, the inside depth being nine inches—the same breadth continues throughout—the bottom of the canoe is perforated with six rather cleanly cut round holes, about three quarters of an inch in diameter.

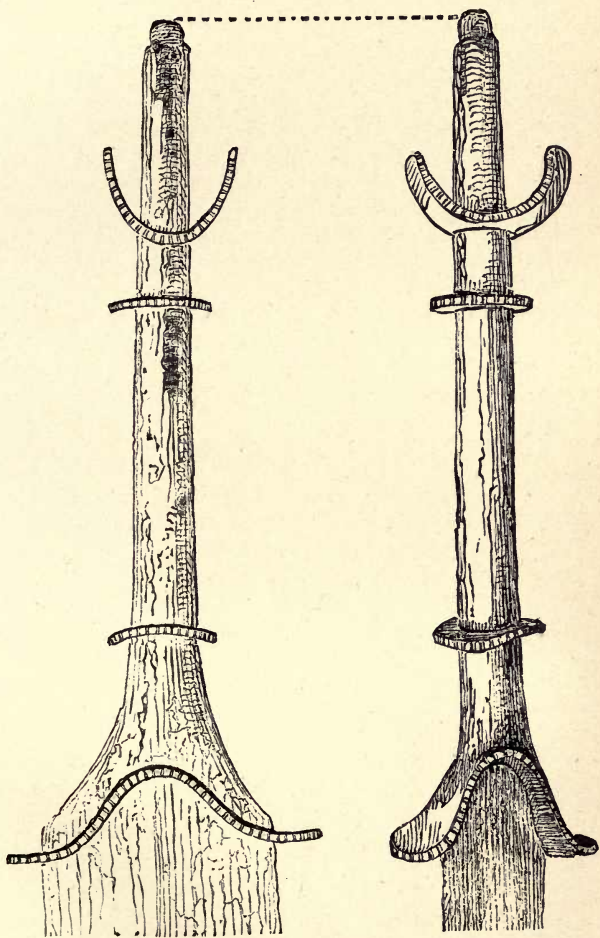
Lisnacroghera crannog lies at a little distance from Broughshane, in the parish of Skerry, barony of Antrim. About the year 1882, workmen employed in cutting turf—bared by the partial drainage of the lough—came upon oaken timbers laid in regular order; unfortunately nearly all were removed before anyone acquainted with the peculiarities of crannog structure had seen them, and in the autumn of 1883, most of the timbers had disappeared, though a few of the encircling piles remained in position. Some remarkable antiquities, discovered either within or around it, have been rescued from oblivion and destruction. A spear with iron head and butt, and rivets of bronze, and the iron sword-blades enclosed in sheaths of bronze (which are now in Canon Grainger's museum), seem to call for prominent notice. With regard to these the Rev. James Graves says:—"It cannot be denied that this crannog find is one of the most important and valuable yet recorded in Ireland, especially in its bearing on the style and the chronology of the art of that early period when the bronze and iron eras overlapped. The spears have bronze butts, with terminal iron heads, for such were discovered in the crannog, whilst no spear-heads of bronze—an imperishable metal—were found. The bronze rivets remained in the shafts by which the iron heads had been secured. All this reminded one of the ninth century legend of the armourers of the Tuatha dé Danann when preparing for battle with the Fomorians at the northern Moytura. The mode of workmanship is graphically described:—Goibniu at his forge finishes the spear-heads in three hammer-strokes (proba-

bly they went through three processes in their fabrication) ; so it was also with the work of Luchtiné on the ashen spear-shafts, and Creidné on the bronze rivets. When Goibniu had finished the iron lance-head, he seized it with his pincers and sent it quivering into the door-post. Then Luchtiné launched the finished shaft so surely aimed that it found the socket of the lance-head, and penetrating to the bottom was firmly fixed there : whilst Creidné instantly flung from his pincers the finished *bronze* rivet with so sure and true an aim that it entered the rivet-holes to the required depth, and so the weapon was completed (*Three Irish Glossaries*, p. 32, *Sanas Cormaic*, p. 123). Hence, without assuming that the bronze-iron age should be thrown back to the mythic period of the Tuatha dé Danann and the Fomorians, it is evident that in the ninth century there was a tradition of its characteristics and existence in Ireland, and that of so remote a date as to suit the myth of the contest of the gods of light and life with the deities of darkness and death. The fashion of the spears, of the swords, and of their sheaths, prevailing at this early period, when the use of bronze and iron overlapped, has been hitherto but sparingly revealed to us by finds of weapons in England, Scotland, and Scandinavia. Kemble, in his *Horæ Ferales*, engraves several examples of short swords or daggers, the fashion of which is identical with that now for the first time so clearly shown us by the Lisnacrogghera crannog find." Professor Anderson, in his *Rhind Lectures*, has recorded the discovery of a bronze spear-butt, exactly similar, in one of the *brochs* of Scotland ; it is correlated by him with the pagan iron age ; and in a recent number of the *Proceedings* of the Royal Society of Antiquaries of Denmark there is engraved an iron sword-blade, with bronze haft-mountings, nearly identical in form and fashion with those discovered at Lisnacrogghera.*

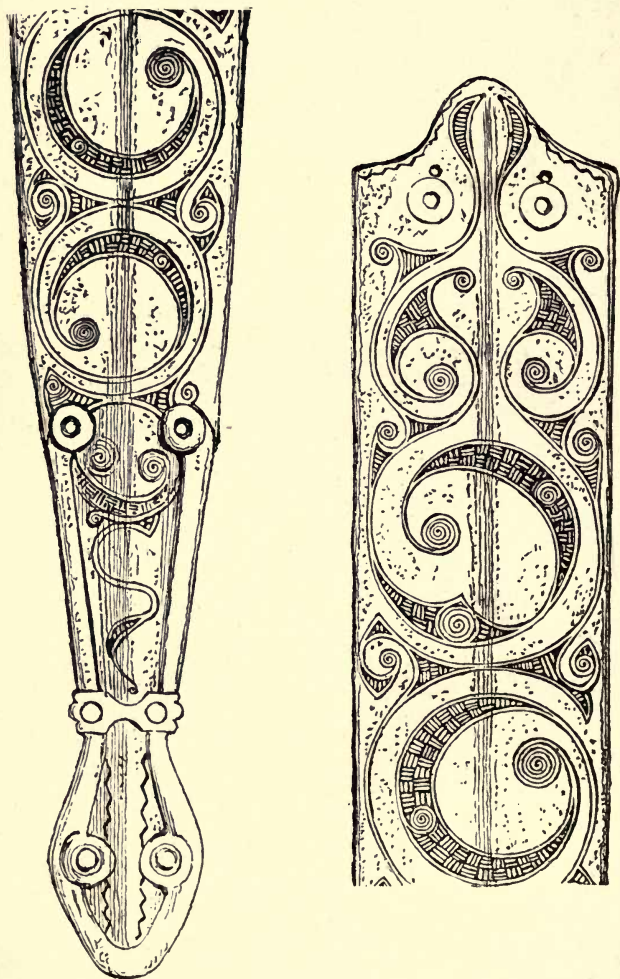
The antiquities found in this crannog consisted of a plain bronze sheath (plate XII., fig. 1), containing an iron sword (p. 61,

* *Journal Royal. Hist. and Arch. Asso. of Ireland*, vol. vi. (4th Series), pp. 406-8.—Rev. James Graves.

"Solinus relates that the Irish formed the handles of their swords from the teeth of large sea-monsters which they polished to a most beautiful whiteness." "That the handles were very much smaller than those of modern swords with guards, and used for cutting as well as thrusting, there can be no doubt, yet some of them are large enough to receive a moderate-sized hand. Without discussing the generally received opinion that the men who used such swords had very small hands—like some of the Asiatics of the present day—the mode of using these weapons must not be forgotten. They were employed for stabbing and fencing, in which the middle, ring, and little fingers alone grasped the handle completely, while the thumb and fore-finger passed



Haft of Iron Sword, with Bronze Mountings, from Lisnacroghera. Full size.



Upper and lower portions of side of the Bronze Sheath, from Lisnacroghera, full size, of which a half-size representation is given, Plate XII. fig. 2.

fig. 17) : the haft is represented full size (plate xxxix.). One side of ornamented sheath slightly smaller than the former (plate 12, fig. 2) : a full-sized representation is given (plate xl.).

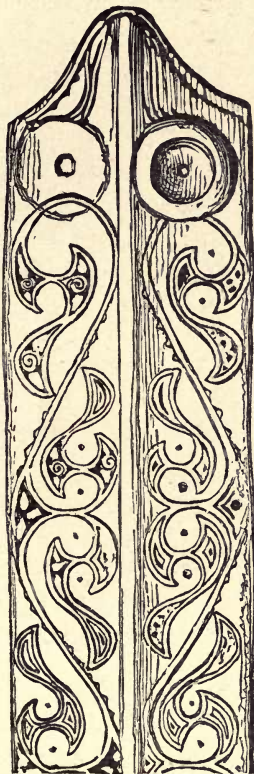


Fig. 199.—Upper portion of Bronze Sheath. Full-size.

Another ornamented bronze sheath (plate xii., fig. 3), of which the upper portion is here given, full size. A sword of iron with

upwards on each side of the blade, fitting into the curved hollows of the hilt—and not like the method of the cavalry soldier of the present day, who, when about to deal a heavy blow, grasps his weapon with the closed hand, which must occupy a space of about four and a-half inches.”—*Cat. Mus., R.I.A.*, p. 456.

bronze fittings to the handle: this is not the sword to which the sheath belongs. An iron sickle that had been affixed to its handle by a tang; their usual length was twelve inches—occasionally much smaller—and they may be divided into two classes, bronze



Fig. 200.—Iron Sickle. Eleven inches from point of blade to end of tang.

and iron. Sickles of iron have been found amongst Roman and Saxon remains in Britain. A spear-head of iron (*ante*, plate x.). An iron adze (*ante*, p. 69, fig. 31), and some miscellaneous objects

of the same metal (*ante*, p. 68, figs. 28 to 30). Six butt-ends of spear-shafts formed of bronze: five of these are represented (p. 64, figs. 19 to 23); the sixth is here given (fig. 201). Boss-like objects (six in number) and rings of bronze, supposed to be fragments of defensive armour (plate xv.). A bronze rivet (*ante*, p. 119, fig. 152). Two hollow penannular rings of bronze (*ante*, p. 119, fig. 150). An article composed of bronze, probably an amulet (*ante*, p. 116, fig. 145). An object in bronze, richly decorated (*ante*, p. 67, fig. 26). Three circlets of bronze (*ante*, p. 119, figs. 153-5). A small loop of bronze (*ante*, p. 109, fig. 135). A disc composed of thin bronze (*ante*, p. 72, fig. 34). A small boss or stud of bronze (*ante*, p. 119, fig. 151). Portion of an amulet of jet. Three beads of glass (*ante*, p. 124, figs. 165-7).



Fig. 201.—Bronze Butt of Spear-shaft. Two-thirds natural size.

Craigycwarren.—*Ante*, p. 110.

Loughavarra.—*Ante*, p. 153.

Lough Lynch.—*Ante*, p. 153.

Lough Crannagh (or *Lough-na-crannagh*).—*Ante*, p. 28.—Amongst the scientific grants for the year 1885, recommended by the Council, R. I. A., appears the following;—"£20 to Mr. Alexander M'Henry for a report on the animal and other remains found in the sand-hills of Ballintoy and the crannog of *Lough-na-crannagh*."

Lough Ronel is a name set down in the ms. register of Irish crannog objects, &c., British Museum. It is most probably an incorrect designation for *Lough Ravel*.

COUNTY DOWN.

During the working of the Commission for the Arterial Drainage of Ireland, a crannog—no name given—was discovered in this county, and traces of another at *Ardrin* (*ante*, pp. 126-8).

Ballykinler.—In 1860 this crannog was no longer traceable, but fortunately a short description of it had been previously given. The section made through its centre showed it to be of the usual construction—surrounded by a circle of small piles, driven deep

into the mud, and secured by cross-beams firmly mortised together, the space so enclosed filled with brushwood, on which was placed a layer of gravel and earth, that process being repeated until the surface became perfectly solid.*

Lough Faughan, or Falcon, in the barony of Lecale.—About the year 1845 a crannog was discovered in this lake. “There were large stakes driven into the ground, completely enclosing the space within, and not rising above the surface as a palisade, but evidently for the purpose of keeping in the soil from encroachment of the water. The tradition respecting it is, that there had been a castle on the shore opposite, the chieftain of which caused this island to be made as a place of refuge from the sudden onslaughts of the O’Neils; and to render this retreat more secure he would never allow more than one boat or canoe on the lake.” During drainage operations a “dug-out” of oak was found near this crannog, from which locality were also procured two earthen pitchers (*ante*, p. 92, fig. 66).

Ballywoolen.—This crannog was entire when seen in 1860, in a lake surrounded by hills, the surface of the island nearly level with the water. At one spot there was a flagging of flat stones where the hearth had been, and near it lay a quern.† The discoverer states the site of this crannog to be in the county Down; but the only townland in Ireland named Ballywoolen, is set down in the Ordnance Survey as situated in the parish of Dunboe, barony of Coleraine, county Derry.

COUNTY ARMAGH.

Camlough has a crannog at its north end.

↘ *Marlaco Lough*, near Armagh, has another.

Lough Ross, near Crossmaglen, also contains one, stated to have been the place of meeting of the Irish leaders in 1641.‡

* In the kitchen-midden was the ordinary complement of bones, principally those of the ox, boar, sheep, goat, dog, and deer. Seven short scythes of bronze, a plough-sock of iron, a plough-share of flint, several iron spear-heads, and some pins, were also brought to light..

† *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. iii. (New Series), pp. 86-7.

‡ *Ibid*, vol. vi. (4th Series), p. 432.—H. W. Lett.

COUNTY TYRONE.

During the working of the Commission for the Arterial Drainage of Ireland, a crannog was discovered in this county, but its exact locality was not defined.

Corcreevy (alias *Loch-Laoghaire*), by which latter name it is mentioned in the *Annals* (*ante*, pp. 155-6).—The site was examined and the following articles brought to light: a pair of bronze and iron manacles; a double comb of bone in a perfect state, length 3 inches, and breadth $2\frac{3}{8}$ inches, and having a brass ring attached to one extremity—it is now in the Museum, R. I. A.; parts of a musical instrument; an arrow-head; a-spear-head; a sling, or hammer-stone.*

Cranny townland in this county possibly derives its name from having been the former site of a lake dwelling.

Clogherny, in the parish of this name, in the barony of East Omagh. The Rev. R. V. Dixon, D.D., thus notices the discovery of a crannog situated in a bog on the borders of the townland of Roscavey. About eight or ten feet below the surface turf-cutters laid bare the tops of a row of oaken planks which described a circle about seventy feet in diameter. These planks were from eight inches to fourteen inches in width, and from three inches to five inches in thickness, roughly split from the log, the lower extremities pointed and driven ten or twelve inches into the ground; their tops were all decayed; the length of the remaining part was about four feet. Each plank was pierced by a square hole, bearing marks of having been made by a blunt tool, and this orifice was narrower at the centre than at the edges. The planks forming the enclosure were placed edge to edge, and several rough logs of alder and birch, from two inches to four inches in diameter, were

* *Proceedings R.I.A.*, vol. v., p. 215.

laid horizontally against the lower part of the planks on the inside of the enclosure, which was floored with oak, and underneath was about two feet of peat. Between the oaken floor and the outer fence were several flag-stones, evidently the old hearths, as shown by the quantity of charred wood that was about them. Southward two square posts were found. This crannog lay in a depression running nearly E. and W. between two sloping hills. "The fall of this hollow is towards the east, where it spreads out and sinks into a large basin, or glen, closed by rising ground of considerable height to the north and east; by a gravel ridge, or 'esker,' on the south; and opening on the west into the hollow in which the crannog stood. A considerable mountain stream enters this basin from the east, and after flowing round a conical gravel hill (connected with the esker) which stands in the middle of it, escapes through a deep natural cut or gap in the esker which, as before mentioned, closes the basin on the south. If this cut were closed, the basin would be filled up by the stream which now flows through it, and the level of the water would probably rise sufficiently high to fill the hollow in which the crannog stood, and this hollow would then form a shallow arm of the lake."*

Galbally.—*Ante*, p. 60, plate vii.

Roughan.—*Ante*, p. 88.

COUNTY DONEGAL.

Crannog-boy, parish of Inishkeel, barony of Banagh.—*Ante*, p. 28.

Mongarlin, parish of Taughboyne, barony of Raphoe.—*Ante*, p. 151.

Lough Veagh.—*Ante*, p. 154.

Drumkelin, or *Drumkeelin*, parish of Inver, barony of Banagh.—The account of the crannog-hut here exhumed is given, *ante*, pp. 39–41.

* *Lake Dwellings of Switzerland*.—Keller. 2nd ed.

COUNTY DERRY.

Inishrush.—*Ante*, p. 152.

Loughshillen.—*Ante*, pp. 148-9.

Loughan Island.—*Ante*, pp. 153 and 155.—Six stone celts, two bronze celts, three fibulæ, a bridle-bit, two bronze cheek-pieces (*ante*, pp. 136-7), an iron spear-head and spike,* were found here, and are now in the Museum, R. I. A.

Fort Lough occupies nearly the centre of an extensive bog on the right-hand side of one of the roads leading from St. Johnstown to Burt on Lough Swilly. It is described as about one mile long, and a quarter wide, but was formerly of much greater extent. There was a tradition that formerly a castle erected in the centre of this lake had been submerged by the neglect of a girl in not carefully *re-covering* a fairy fountain in the vaults, and consequently the waters burst forth in a raging torrent! After drainage operations, when the level of the lough subsided, marks of an island became visible in the centre, and by degrees stonework was observed rising above the surface, proving that the subaquatic castle was not altogether mere visionary fiction. These walls were found supporting a deposit of peat.†

COUNTY FERMANAGH.

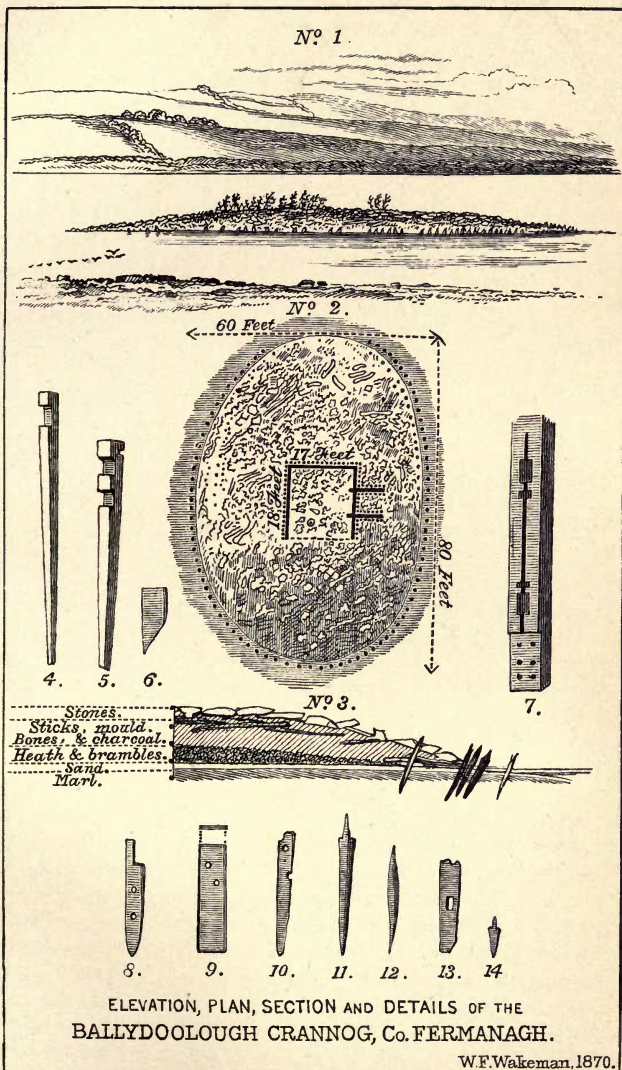
Ballydoolough (*the place of the dark lake*) is five miles distant from the town of Enniskillen; the expanse of water covers not more than twenty-four acres, and even during times of flood never exceeds twenty feet in depth; at the bottom could be discerned remains of a primæval forest. In June, 1870, from the effect either of drainage or of long-continued drought, a small island became apparent, on which were found fragments of fictile ware, and this led to a careful examination being made. Near the centre was an oaken beam, fifteen feet seven inches long, having evidently formed portion of one side of the lower framework of a

* *Proceedings R.I.A.*, vol. v., p. 417.

† *Ireland: its Scenery*, &c., &c., by Mr. and Mrs. J. C. Hall, vol. iii., p. 259.

dwelling. It was grooved throughout its entire length (plate xli., No. 7), and had two holes—measuring nine inches by six—that were plainly intended for the reception of upright posts, to which the sheeting or side-boards of the structure were attached. Several oaken slabs, grooved at the sides (plate xli., No. 9), were discovered in close proximity buried in the sand and mud. Upon clearing the foundation, the framework of the house was shown to be composed of well-squared beams of oak, grooved for the reception of planks, and mortised for the insertion of uprights, the angles dovetailed together, and fastened with wooden pins. The beam forming the eastern foundation of the house rested upon two blocks of dressed oak that projected from it at a right-angle to a distance of seven feet (plate xli., No. 2), and this foundation may perhaps have supported a landing-stage. The lowest timbers of house and projecting beams were secured in position externally and internally by a row of wooden pegs, or small stakes, which enclosed the entire foundation, and rested against it on the exterior (on the plan these are indicated by a dotted line); the south-western angle of the house was strengthened by a flat block (No. 6). Of the upper work of the edifice no description can be attempted, though several dressed boards (Nos. 4, 5, 8, 9, 10, 13, on a scale of $\frac{1}{8}$ inch to a foot), that had evidently formed part of the structure, were found scattered about.* On the western side of the island, being the one most exposed to the action of the water, the stakes were in greatest number, placed four, and at one point even five, feet deep. In some instances their upper extremities had been inserted in holes cut for their reception in beams of oak laid horizontally, and although only one such beam was found still *in situ*, yet an inhabitant of the locality stated that within his memory many of the horizontal timbers could be seen actually resting upon the stakes or piles, just below the surface of the water. The kitchen-midden of the dwelling contained a considerable quantity of bones, intermixed with numerous fragments of pottery. A selection of the bones having been forwarded to Professor Richard Owen for analysis, he pronounced them to be parts of *Bos longifrons*, *Cervus elephas*, *Sus scrofa*, and *Equus asinus*. In a more or less restored form, characteristic specimens of the pottery are figured

* A considerable portion of the timbers of this dwelling was presented by the Earl of Enniskillen to the Museum of the Royal Hist. and Arch. Association of Ireland.



(*ante*, pp. 92, 95, 96, 97). There were not many articles of bronze, but mention may be made of a plate of that metal, oblong in form, about as thick as a sixpenny-piece, and measuring five and a-half inches in length, by four and a-half inches in breadth; it retained a number of rivets, and appeared like a patch off some pan or dish. In Ireland the majority of cauldrons or dishes composed of thin golden bronze are usually found to have been carefully mended. Of wood, a vessel was discovered in an entire state, but from long saturation reduced almost to a pulp (*ante*, p. 102, fig. 103); and there was a small oaken vessel formed with staves. There were also balls of stone, varying in size from that of an orange to a walnut; several querns, and the inscribed stone described and figured (*ante*, p. 134).*

Coolyermor is the name of a lake four miles from Enniskillen, in the direction of Letterbreen; it contains an island which seemed to be composed entirely of oaken beams; the water, however, was too high to admit of an examination being made.

Drumdarragh, otherwise *Trillick*, has been recently thoroughly examined by W. F. Wakeman, whose report, accompanied by numerous drawings of remains discovered within the crannog, is prepared for publication in the *Journal of the Royal Hist. and Arch. Association of Ireland*. To the Museum of that Society the Earl of Enniskillen, in 1875, presented an oak paddle found at *Drumdarragh* crannog, in company with a single-tree canoe that had been unfortunately destroyed.†

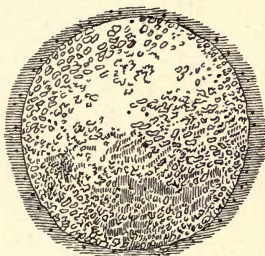
* The following is a list of antiquities of minor interest:—A crucible of the usual crannog kind, in a perfect state. A brooch, or fibula, composed of iron, bronze, and a white metal—perhaps silver; it had evidently been prepared for enamel—the pin was eaten away by corrosion. An iron knife, with bronze mounting to the handle, which was pierced for rivets. An ordinary crannog knife-blade, like those found in Anglo-Saxon interments. Portion of a small iron shoe for horse or ass. Piece of an iron band. A thin bronze fillet that might have been used for securing the staves of a small wooden vessel, or intended for a hair-band: a lady who tried it on, pronounced it to be decidedly an article of feminine adornment—let that decide the point! A small article of late bronze, apparently belonging to horse trappings. A whetstone. A worked stone or disc. A lump of iron dross or “slag.” The under stone of a quern. From time to time no fewer than three single-piece canoes have been discovered beneath the waters of the lough; one was for years used as a trough for cattle, and afterwards cut up for firewood; the others were utilized in the roofs of out-offices.—*Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. (4th Series), pp. 360, 371.

† *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. iii. (4th Series), pp. 314–15.

Drumgay (the ridge of the geese) lies nearly four miles to the north of the town of Enniskillen, and separated from the northern shore of Lough Erne by a narrow belt of land. This sheet of water is completely land-locked; there are in it three islets, and the south-eastern shore has a projecting point of artificial construction that becomes an island owing to the rise of water in winter time. Plate XLII., No. 1, conveys an excellent idea of the general aspect of the lake, and of the position of the islands; the large wooded one, situated near the centre, and now known as "Bone Island"—although its older appellation appears to have been "Cherry Island"—is constructed of beams of oak, ash, and pine, laid in rough blocks, radiating from a centre to the edge of a circle formed of stakes set in the ground, the diameter from north to south being one hundred and five feet, but from east to west a few feet less (plate XLII., No. 2). When the lake is at summer level the encircling piles are plainly visible; they had been roughly trimmed with an instrument of metal; the longitudinal cuts measured nearly a foot, and some of the piles were of oak (plate XLII., No. 7); they had no slope outward, and only at a few points did the rough wood and small branches usually interwoven with them still remain in position. From a point near the centre of the crannog, in a direct line to the eastern shore, a trench was dug; it commenced in the centre, was cut outwards to the water's edge, and thus prevented sudden flooding; a similar trench was subsequently made on the opposite shore. As the result of these excavations, a very distinct idea of the internal construction of the work was obtained (plate XLII., No. 4). The old crannog-builders appear to have selected a natural shoal in the lough as the scene of their operations. This shoal consisted of marl covered by a streak of whitish sand about four inches in depth; over the sand, to a height of six or eight inches, was a stratum of yellowish clay, which supported unhewn logs of oak and birch, together with an immense quantity of small branches, twigs, brambles, and small pebbles, all compressed into a peat-like mass about two feet thick; this was covered by two feet of earth, containing here and there layers of burnt clay and bones; the clay was mixed throughout with bones of animals greatly broken, articles of early manufacture, slag or dross iron, charcoal, and rough stones. The surface of the island was in many parts covered with flat stones of considerable size, and stakes larger than those which formed the outer



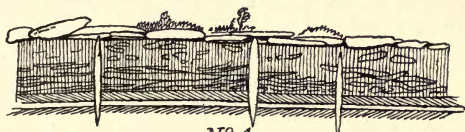
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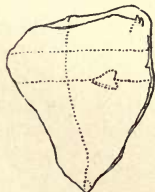
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Nº 7.

DRUMGAY CRANNOGS

W F. Wakeman, 1870.

circle, yet of the same character, were found here and there, even in the highest and most central parts; they were designed to stay and prop the work, for their points were deeply imbedded in the marl which formed the bottom of the lough. It was impossible to procure any perfect specimen of these supports, as the wood, softened by saturation, broke off on application of the slightest pressure. Scattered amongst the bones that lay upon the shore of the island, were several fragments of earthen vessels; the one represented (*ante*, p. 93) was found here. Although search was made, yet comparatively few antiques were brought to light.*

In plate XLII. a large island is represented to the extreme left; this is what may be termed a composite crannog. The body of the island, formed entirely of stones, was formerly surrounded by rows of oaken stakes; none, however, are now to be seen; they served as fuel to a man who lived on the shores of the lake. The greatest height of this island above summer level of the water was about five feet, the form an irregular oval, two hundred and seventy feet in length, by one hundred and thirty-eight feet in breadth, and a trench cut through to a depth of five feet reached what seemed to have been the ancient bottom of the lake. The great peculiarity of this structure is that the collection of small flat sandstones of which it was composed had been placed on edge (plate XLII., No. 5). By the country people it is appropriately styled "the quarry." Close to the north-western extremity of the lake may be seen a small crannog—about thirty feet in diameter—that is all but submerged even in the driest season; the few oaken timbers that remain seem to radiate from a common centre, and

* The following is a list of the articles found on "Bone Island":—Nine pieces of deer's horn, four of them curiously fashioned (*ante*, p. 80). Several fragments of quern-stones; it was stated by the older inhabitants of the surrounding district that many years previously the entire surface of the island was covered with querns in a more or less perfect condition; two of those obtained (*ante*, p. 89) were inscribed with a cross-like ornamentation. Four whetstones of the usual four-sided crannog type; they vary in size from six inches to four inches in length. Portions of rims of vessels of fictile ware (*ante*, p. 98); a large fragment had been discovered on the island some time previously. There were also articles both of bronze and iron, but so greatly fractured and corroded that their character could not well be defined. When excavating near the centre of the island, at a distance of about two and a-half feet from the surface, a large stone was found with a punched cross-like pattern upon one of its sides (plate XLII., No. 6). Bones of animals, principally of the cow, goat, sheep, and pig, were found in such immense numbers, that the crannog became known as "Bone Island."

are intermixed with stones, as shown in plate XLII., No. 3. Evidently this islet had originally been strongly staked. The fourth and last crannog is represented at the extreme right of the general view of the lake; but here the crannog wrecker had been at work, and the stakes that formerly entirely surrounded it were pulled up and used as fuel. A curiously sculptured stone (*ante*, p. 90) was discovered here. The last two crannogs lay at a very low level, owing perhaps to the fact of an unusual quantity of boughs and compressible matter having been used in their construction. Portion of a single-tree canoe of oak was found in the lake, as also two very neatly formed paddles of oak, measuring about two and a-half feet in length.*

Gortalough (the field of the lake) is situated near Drumgay, and within three miles of Enniskillen. Here a log-house, or crannog-hut was discovered buried under many feet of peat, but no trace of it now remains.†

Drumskimly, near Derrygonnelly.—In this lake, now almost drained, there were formerly two crannogs that are in the present day dry and under cultivation; but there remained a little island surrounded by water and well palisaded in the usual manner; it was circular in form, and about thirty-five feet in diameter; its surface has been converted into a garden. From time to time were here disinterred a spear-head and arrow-head, both of iron; a pair of quern-stones, and many fragments of pottery; one of the latter is figured (*ante*, p. 100).‡

Drumslloe.—See *ante*, pp. 87–88.

Ballaghmore is the name now applied to a lake (about a mile and a-half from Enniskillen) in which was a crannog seemingly composed entirely of earth and stones, in a soft depth of mud, surrounded with a mass of aqueous vegetation. No piles were visible.

Moinoe (the bog of the yew) is a locality about a mile from Enniskillen, and sometimes called Chanter Hill. It was the former site of a lake which now in summer becomes a soft and treacherous swamp, and such traces of the crannog as yet remain would be difficult to explore. A single-tree canoe was found in the bed of the ancient lough.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. (4th Series), pp. 232–235, 305–314.

† *Ibid.*, vol. v. (4th Series), p. 336.

‡ *Ibid.*, vol. i. (4th Series), p. 583.

Breagho (wolf-field).—Near a place of this name labourers when cutting turf came upon a stockaded enclosure buried some twelve or fourteen feet below the then surface of the bog; the crannog was circular, and about thirty-five feet in diameter. A pair of quern-stones, a large oaken, bowl-shaped vessel, split in several places, and the sawn and perforated bones of a *Megaceros hibernicus*, were the only “finds” recorded.

Aughlish.—In a lake so called, about five miles from Enniskillen, in the direction of Boho, there is a crannog, but the height of the water precluded an examination. The tops of numerous piles are frequently visible in summer-time.

Killynure (the wood of the yews) is a small lakelet, distant a mile from Enniskillen, on the Tempo road. It contains a crannog which is usually flooded.

Lough Acrussel is situated near Enniskillen. The crannog was found standing in deep water; but after a continuance of dry weather the piling all around could be distinctly seen, and the posts were, as a rule, connected by horizontal beams. Near the centre of the island there was a large flag-stone that had evidently been used as a hearth. Upon sinking shallow trenches through portions of the work, bones and teeth of animals of the usual character were discovered, as also iron slag, wood charcoal in small quantities, and some thin pieces of bronze, seemingly parts of a cauldron or dish. The plan of the crannog was nearly a perfect circle, and its diameter sixty feet.*

Lough Yoan.—In the summer of 1883, the crannog in this lake was visited by W. F. Wakeman, who reported that its surface seemed covered with bones of various animals, the larger of them having been broken apparently for extraction of the marrow. There were several whetstones and fragments of querns; but no traces of woodwork remained visible, though possibly by digging through the sand and stones, of which the shoal is chiefly composed, some discoveries might be made.

Lankhill.—In this lake, situated near Enniskillen, a crannog was discovered by W. F. Wakeman, by whom it will be described

* *Holly Island*, in Lough Erne, had evidently been fortified; it is situated within a mile of Enniskillen, and in summer-time distinct traces become visible of the stockade by which it had been defended on the side facing the mainland; the island itself is, however, of entirely natural formation.

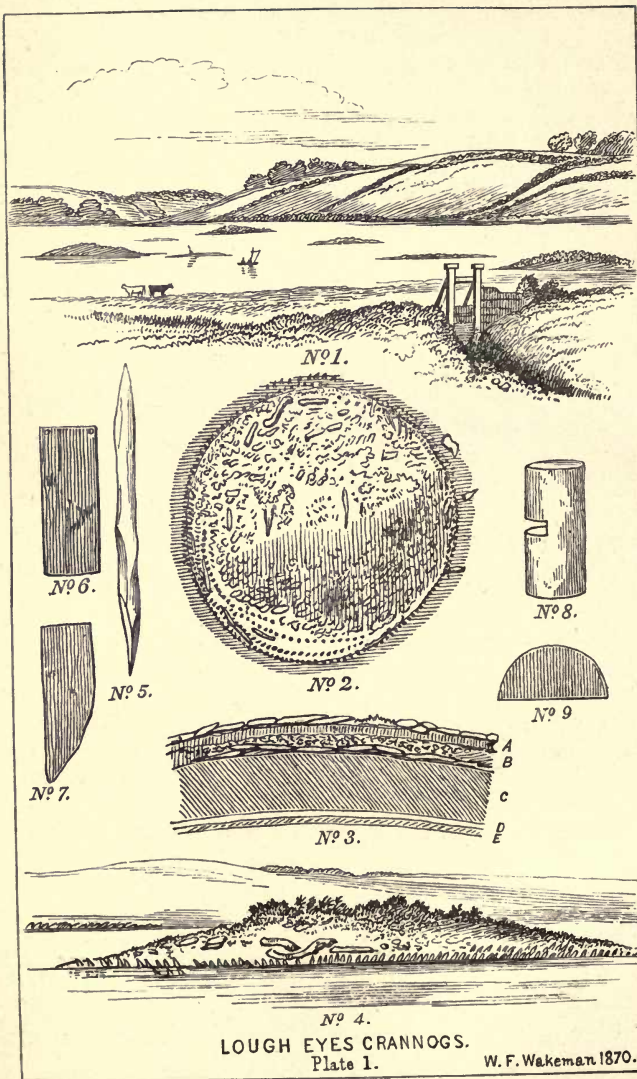
in a forthcoming number of the *Journal Royal Hist. and Arch. Association of Ireland*.

Lough Macnean contains four islets, the one lying close to the western shore being appropriately designated "Crannog Island." Its diameter is about sixty-four feet, and the work, which consists of a cairn of stones—rising to a height of eight or ten feet above the winter level of the water—had been formerly enclosed by a double row of piles composed of oak, yew, and pine. The usual amount of bones, a couple of fragments of pottery, and a large quantity of iron slag and charcoal, alone were discovered, although the shore was carefully searched. The island situated near Belcoo was of the same dimensions and formation; nothing but bones, slag, and charcoal, were found in it. In the crannog at the southern extremity of the lake, digging had to be discontinued in consequence of the percolation of the water. Much of the piling was still visible, although everywhere reduced to a state of pulp. The fourth islet, named *Inishee* (i. e. *fairy island*), yielded nothing; it was of natural formation.*

Lenaghan.—Here, about three miles from Enniskillen, is a small lake containing a crannog. On it were found immense numbers of animal bones, as also some few antiquities; one of them, a dagger of bone, measured fourteen inches in length.

Lough Eyes is situated two miles north-east of the village of Lisbellaw; it is about two-thirds of a mile long, by less than a quarter of a mile across at its greatest breadth. This lough was not known to possess any manner of interest, scenic or otherwise, except indeed for the disciples of Isaak Walton, who found it well stocked with scaly prey. The Irish name of the lake appears to have been lost, possibly corrupted, or perhaps translated, for near the southern shore a spring called *Tobernasoul*—"the well of the eyes"—still gives forth water forming a small rivulet that connects the well with the lake, so that in all probability this furnishes a clue to the modern name of the sheet of water. *Lough Eyes*, like the crannog retreats of Ballydoolough and Drumgay—distant respectively about three miles—was anciently embosomed in a dense primæval forest. The roots and portions of the stems of oak, pine, and alder, of immense size, remained *in situ*, and were in such close proximity that their foliage must have commingled and formed a

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. ii. (4th Series), pp. 323-4.



canopy impervious to storm. The forest, however, has been "pared to the stump," as may be seen from the sketch of the locality—taken from the south-east—which conveys a fair idea of the *tout ensemble* of the scene. In consequence of the exceptional dryness of the summer of 1870, the level of the water was greatly diminished, and the islands (six in number) became exposed to view (plate XLIII., No. 1). Although the elevation of the remains above the surface of the water was unequal, still the rows of piling by which the lake dwellings had been protected and enclosed were on about the same plane. The crannog that was situated in the deepest part of the lake would appear to have sunk, but its subsidence may be attributed to the perishable nature of its component parts—logs and branches. The other habitations were constructed upon shoals—in one instance upon a natural turf-bank artificially strengthened, and then raised to the required height with layers of sticks, brambles, earth, and stones. Plate XLIII., Nos. 2, 3, 4, give the ground-plan, section, and general aspect of the most important crannog of the group; its greatest height above summer level is ten feet, but it is never entirely submerged; it measures two hundred and eight feet in circumference. A trench cut across the island (plate XLIII., No. 3) demonstrated its artificial strata to be as follows:—The surface consisted of a layer—averaging a foot in depth—of stones deposited without any appearance of regularity; these stones rested upon a layer of earth (A) of similar thickness, from which broken bones and small particles of charcoal were disinterred. Underneath was a stratum (B) that had been formed of branches of oak, alder, pine, hazel, &c., roughly thrown together, and with traces of the bark still distinctly discernible, intermixed also with remains of brambles, decayed foliage, small stones or gravel, a little earth and bog mould. Next followed about six feet of a seemingly undisturbed stratum of peat (C), lying upon a deposit of sand and marl (D and E), which probably at some very remote period had formed the original lake bottom. The stockading that originally surrounded the islet still existed. To the west and north the stakes were four deep, driven in close together, and forming an almost solid whole; they were nearly all of oak, roughly hewn, and sharply pointed by a metal instrument (plate XLIII., No. 5). Half buried in the soil were several pieces of oak—one a barrel-shaped block (plate XLIII., No. 8), one foot four inches in length, by one foot ten inches in circumference;

the groove cut in one of its sides is two inches deep, by one and a-half inches broad. The other block (plate XLIII., No. 6) measures one foot seven inches, by six inches; another is slightly smaller; and a fourth (No. 9) has all the appearance of having formed portion of the bottom of a wooden vessel; it measures twelve inches across.

Subsequently, at a season when the water was exceptionally low, the locality was again examined, and a shoal or ridge, evidently the remains of a piled causeway by which the islands in Lough Eyes had been connected together, was then discovered. In the neighbourhood a tradition existed that in ancient times "a road passed through Lough Eyes." This lingering belief would be fully explained by the existence of a *kesh* or causeway—and upon this, as well as upon the main crannog, was found a quantity of bones of the *Bos longifrons*, red deer, ass, sheep, goat, and pig. Mixed with the animal remains was an extraordinary collection of broken earthen vessels like those in the Drumgay and Ballydoolough sites. The fragments were nearly all more or less ornamented with indented patterns, sometimes arranged simply in lines, in other cases presenting chevron designs. The illustrations (*ante*, pp. 93, 94) represent two of these vessels restored. Fig. 71 is a flat disc, seemingly a cover or lid. Figs. 72, 73, 98, 99, and 100, were also found in this locality. Second in position from the left side of the general view of Lough Eyes (plate XLIII.), a very small island (No. 2 crannog) may be discerned in the distance: this is a sunken crannog; its appearance is shown in the lowest sketch (plate XLIV.). To the right, in the general view (plate XLIII.), is the most northern crannog (No. 3) of the group; its general plan and details form the three upper sketches of plate XLIV. The shape was circular, the diameter about fifty feet, the piles stood almost as originally driven, but the horizontal timbers of the interior had disappeared. A cruciform section demonstrated that the island consisted of a low mound formed of sand, earth, and stones, which had settled down into their then position. A whetstone, and portion of a highly decorated quern (*ante*, p. 88), rewarded the search. Bones lay scattered along the beach, as well as over the surface of the islet, and pottery was found in abundance (see *ante*, plate XVIII.). The fourth island (No. 4) from the left of the view is represented in the sketch second from the bottom (plate XLIV.). It was



LOUGH EYES.

Plate. 2.



General View of the half-drained Lake of Loughavilly.

similar to the last described: a cruciform section of considerable depth threw little light on the internal construction; there were only layers of earth, sand, and sticks. The result of a search and digging along the shore brought to light a portion of the upper stone of a quern, fractured bones, and small fragments of pottery. The fifth crannog was of the sunken class, although some of the stakes were still *in situ*. It was low and narrow, seldom above water, therefore its exploration was practically impossible. Some bones and fragments of pottery (*ante*, plate xix.), a whetstone, and pieces of a jet bracelet, were the sole mementoes discovered. The sixth, and last crannog is to the extreme right of the general view (plate XLIII.). In summer-time, during low water, it was a peninsula. Many of the stakes retained their position, but a section made into it presented nothing of importance. From about the group of crannogs, fragmentary specimens of what had probably been bracelets of jet were discovered, and the axe-head of deer's horn figured and described (*ante*, p. 59) was dug up in this locality. The bones, pottery, and other debris, seemed to be distributed pretty equally all around. Copper vessels had been found in connexion with these lake dwellings, but attracted no attention as they were supposed to be part of the "plant" of poteen distillers.* In the neighbourhood small mounds—consisting chiefly of heaps of burnt sandstone—were very common; these stones were easily pulverised.

Pad, or *Boat Lough*, close to Lough Eyes, is a very small lake, in which is the site of a crannog, not yet explored on account of the depth of the water.

Monea.—See *ante*, pp. 69-70.

Wolf Loch.—There is said to have been formerly a crannog in this lake.

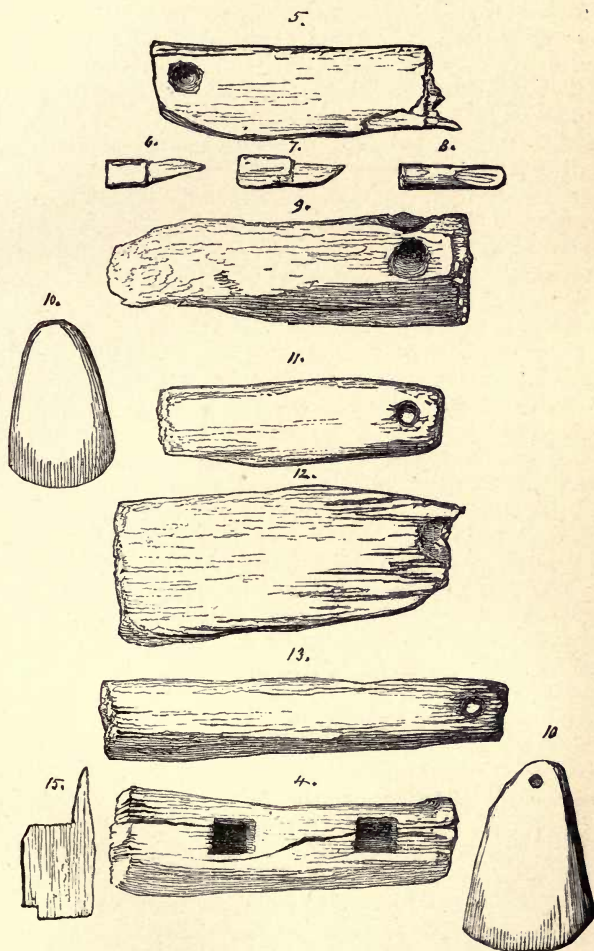
Loughavilly (*the lake of the old tree*), now nearly drained, is represented (plate XLV.) as seen from the south, with Topped Mountain in the background. The piled mound visible in the middle distance, to the right, is the remains of a crannog that appeared to belong to an age when stone implements were in use, judging from the character of the few antiquities found within it. In the summer of 1871 there was still observable a small portion

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. (4th Series), pp. 553-564.—W. F. Wakeman.

of the original lake dwelling. "This consisted of a roughly squared block of oak, measuring four feet three inches in length, by one foot in breadth. It was nine inches in thickness, and exhibited upon what appeared to have been its upper surface two quadrangular mortise-holes, one of which was a square, six inches by six inches, and four inches in depth; the other, an oblong, six inches by five inches, and somewhat shallower than the former. They were placed at a distance of one foot three inches apart, and presented all the appearance of having been fashioned by a rude stone instrument." The mortise-holes were not deeply sunk in the two logs remaining on this crannog; they are represented (plate XLVI., figs. 14 and 15). Fig. 16, a rudely-shaped stone axe-head or chisel, four and a-half inches in length by two and a-half inches in extreme breadth, was also discovered here.

Kilnamaddo.—For description of this crannog, see *ante*, pp. 37-39. Amongst the "finds" were an ordinary whetstone, a couple of hammer-stones, some flint-flakes, a large tray-like vessel composed of oak, some fragments of rude pottery, and a pair of rubbing-stones. Plate XLVI., figs. 5 and 9, are angle-posts of the second hut, they measure respectively three feet eleven inches, and four feet nine inches. Figs. 6, 7, and 8 (about one foot four inches in length), are pegs used probably to secure the lower logs in position; these pegs varied in size, and bore the marks of being cleanly cut by a sharp metallic instrument.

The Miracles.—At a place bearing this singular name, and situated near the village of Monea, turf-cutters in the year 1875 came upon the remains of a hut occupying the centre of an artificial island which stood in the middle of what had formerly been a small lake. Unfortunately the timbers and beams with which it was constructed were carried off before anyone skilled in archaeological matters had seen them *in situ*; but the posts represented (plate XLVI., figs. 11, 12, and 13) were evidently angle-posts, resembling those in Kilnamaddo, and, like them, not exhibiting the bruised appearance produced by stone hatchets. There were pieces of iron slag, quantities of burnt wood, a well-formed crucible, sharpening and grinding stones, a stone or pounding instrument (*ante*, p. 74), and a beautifully-formed, highly-polished, axe-head, and a chisel of stone. Amongst the "finds" were numerous articles of bronze, which are now dispersed, and cannot be traced; but from the description given of them by the workmen they were



Remains, &c., found at Loughavilly, Kilnamaddo, and the Miracles.

probably fibulæ. There were also several oaken paddles, of which one is now in the Museum, R. I. A.; the dimensions of another were seven and a-quarter inches in length, the breadth of the blade being three inches; the handle terminated in an oval expansion measuring two and a-half inches across. Single-piece canoes have, from time to time, been discovered in the neighbourhood.*

Rossole Lake.—In the neighbourhood of this sheet of water (*ante*, p. 49) there lingers a tradition of a “buried city” lying in its depths; therefore, in the event of drainage, it is more than probable a crannog site might be disclosed to view.

COUNTY MONAGHAN.

During the working of the Commission for the Arterial Drainage of Ireland, six crannogs were disclosed in this county; four of these sites have not been identified.

Lough Fea.—A stockaded island in this lake (discovered in 1843) is described in Shirley’s *Dominion of Farney*.

Aghnamullen.—*Ante*, p. 135.

Lough Ooney.—*Ante*, p. 156.

Ballyhoe Lake, distant about five miles from Carrickmacross, was described by G. Morant as situated on the southern verge of the county Monaghan, the greater part of it being in Meath. The lake, of horse-shoe form, is of tolerable extent; the river Glyde, or Lagan, runs through it, and by this stream it is connected with several lakelets lying more northward in the county Monaghan; at the toe of the horse-shoe, owing to the large deposit of mud brought down by the river, the water is very shallow. In this lake were two artificial islands, one of great extent, the other much smaller. In the larger island, to which a causeway led from the mainland, were numerous mounds which had been partially excavated, and here were found two fine specimens of bronze pins, other articles of lesser interest in lead and iron; also a flint spear-head. The shores of the lake were for the most part boggy and

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. v. (4th Series), p. 332.—W. F. Wakeman.

full of large timber, stumps and stems appearing in great quantities, both above and below the level of the water, which was reduced several feet by the drainage of the river. The centre of the horse-shoe was occupied by a peninsula of bog-land with a coating of grass : this tract also abounded with timber, the stumps in many places projecting above the soil. In August, 1864, on the east shore of this peninsula, were observed two chert spear-heads lying just beneath the water at its lowest summer level, and a few yards further along the beach was a rude stone hatchet, about six inches long and two inches deep in its broadest part. The following spring, when the winter floods had subsided, measures were taken to search very carefully, and the result was the collection of a great many flint implements of various types, the greater number of which were lying only a few inches below the surface of the soil, and generally ashes were found with them. In one place a dark-coloured glass bead of barrel-shape was with the flint-flakes, and close to the stump of a large tree was a very fine polished stone hatchet with squared sides, the edge sharp and quite uninjured. In one of the holes made in the bog by the feet of cattle lay a beautiful little arrow-head of dark flint, triangular in shape, chipped to an exquisite sharpness, and curved inwards at the base to form the barbs. With the flakes, knives, scrapers, arrow and spear-heads of flint, were also many specimens in chert or Lydian stone. Near the exit of the river from the lake two different types of light-coloured flint arrow-heads were discovered, the one barbed, and about one and three-quarter inches, the other two inches in length, and of peculiar form ; the latter lay where a deep cutting had been made during the drainage works, and near this spot was anciently a ford, the scene of several encounters between the Danes and Irish, and where in later times the forces of Elizabeth, and the Irish under Tyrone, met in battle array. In a field on the Meath side of the river, stood a castle of which no vestige now remains above the ground : the foundation may, however, still be traced, and many articles have, from time to time, been ploughed and dug up about the site of this old fortalice of the Pale. A fine silver coin of Mary, and a good specimen of a pin-brooch in bronze, with red enamel setting, were found there.

The larger crannog, separated from the mainland by a shallow channel, was in summer accessible by a narrow causeway. In one of its mounds—principally composed of ashes—were leaden bullets,

sharpening-stones, and implements of iron ; on its shores a flint spear-head and bronze pins ; on the edges of the lake close by, flint arrow-heads, hatchets, &c., all of which, found at about the same level, were certainly submerged until the drainage works permanently reduced the height of the lake by several feet. Bullets discovered in these crannogs prove that they were occupied up to a comparatively late date.*

Cargaghoge.—*Ante*, p. 42.

Glaslough, or *Erny Lough*.—*Ante*, p. 151.

Lisanisk.—*Ante*, p. 151.

Lough-na-glack.—*Ante*, p. 81. Two bronze instruments, supposed to have been used for piscatory purposes, were found in connexion with this crannog, also several beads of amber and blue glass ; a comb and three pins made of bone ; an iron dagger fifteen inches in length ; several primitive iron plough-coulters ; fragments of iron instruments (use unknown) ; a long gun-barrel, or caliver ; part of the lock of a pistol, and many bullets of lead.†

Lough Mucknoe.—*Ante*, p. 151.

Lough Monnachin.—*Ante*, p. 151.

Lough Rouskey.—*Ante*, p. 151.

Monalty (near *Lisanisk*).—The first mention of the discovery of various ancient relics in a small artificial island in this lake was made by Mr. Shirley. There was a canoe (hollowed out of a single piece of oak), measuring twenty-four feet in length, also stone and bronze celts, spear-heads, needles, pins, &c., from all which it would seem that here had been one of the strongholds of the chiefs of the district. This crannog—afterwards explored by G. Morant—is situated close to the shore, and during the low state of the water in the year 1863, it became accessible by wading over a few yards of mud. When searching on the exposed side of the island a jewelled ornament was perceived, slightly projecting above the gravel, stones, and mud of which the beach was composed. This proved to be a rock crystal, oval in shape, and set transparently ; the crystal, with its silver setting, measured two and a-half inches in length, by one and three-quarter inches across, and was much corroded on the front ; the little points were surrounded with a cable-twist, as was also the setting. It was pronounced by a

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. vi., pp. 8-10.

† *Archæological Journal*, vol. iii., p. 48.

competent authority to be a work of the fourteenth or fifteenth century. Lying on the surface of the boggy soil was another antique, considered to be a harp-pin; it was of highly-finished work in bronze, the barrel having within it indications of rust.* The crannog had been searched long previously by a man who made a trade of selling antiquities, so that the good fortune of discovering these curiosities must be attributed to the fact of the water-level having been so exceptionally low in the year 1863.

Rahan's Lake is situated near Carrickmacross, and here in 1863 the hearth of a crannog was uncovered; on it were found a quantity of ashes, together with five Queen Mary shillings, fused into a mass, probably by the conflagration which had consumed the dwelling. A bronze pin, a flat spear-head, and stone celt, were also brought to light.†

Leesborough Lake.—An iron skean, seventeen inches long including the tang, the blade thirteen inches, one and a-quarter inches wide at the handle, and one-quarter inch thick, tapering to the point, was found here.

Kilmore Lake.—Two crannogs are known to have existed in this sheet of water.‡

* There were also found here a pair of quern-stones; burnt corn; numerous fragments of coarse earthenware vessels; fragments of thick dark glass; an earthen pot; a "grey-beard," with the representation of a man's head beneath the spout; worked oval stones; "spindle-whorls"; hones of different shapes and sizes; a brass token, almost defaced.

† *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. iv., p. 379.

‡ *Proceedings R. I. A.*, vol. v., Appendix.

The following antiquities were found on crannog sites in the county Monaghan, but the exact localities not mentioned:—Three bronze celts, with loops on their side—in one instance traces of the handle still remained; a bronze dagger, twelve inches in length; two double-pointed bronze arrow-heads; a bronze gouge or chisel; the head of a bronze hunting-spear; part of a bronze sword; a bronze cap, seemingly the termination of the butt of some weapon; the bronze handle of a javelin or spear, with loop attached; the boss of a shield of bronze; a bronze knife, with traces of gilding; two bronze daggers, the one ten and a-half inches, the other seven inches in length; several bronze rings of different sizes, two of them with transverse spring openings, others hollow, being probably parts of armour or horse-trappings; two bronze needles; a bronze pin, the head hollowed like a cup; several bronze pins, of which some were ornamented, and two were of large size and common type; parts of bronze fibulae; fragments of several bronze instruments and numerous rivets; a small circular bell and three bronze hair-pins of various sizes.—*Archæological Journal*, vol. iii., pp. 47–8.

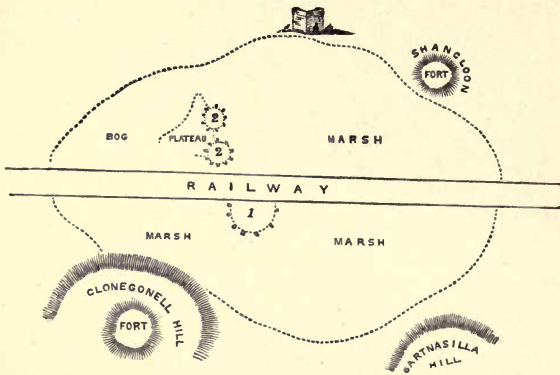


Fig. 202.—General Plan of the Bed of the Drained Lake of Cloneygonnell, *alias* Tonymore.

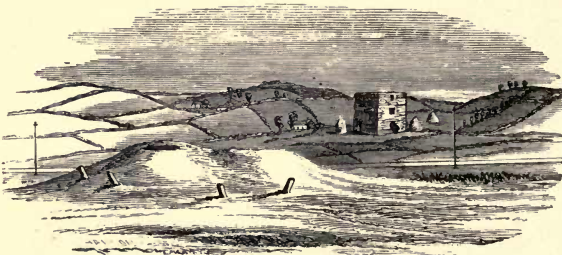


Fig. 203.—General View of the exposed Lake Bed.

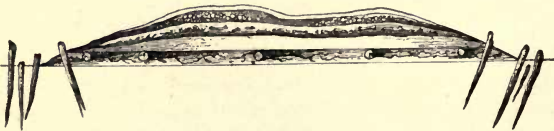


Fig. 204.—Section of Large Crannog.

COUNTY CAVAN.

Cloneygonnell (otherwise Tonymore)—a townland in the parish of Kilmore, barony of Lower Loughree—contained three crannogs that became exposed when the waters of Tonymore Lough had been run off by arterial drainage. Although the tops of the outer row of piles could be seen projecting above the surface, yet the real nature of the largest of these islands—a green oblong mound—was not suspected until after the railway had passed through a portion of it. The land was described as rising, in a succession of low hills, from what had been the ancient margin of the lake; on the north and south sides were the raths of Shancloon and Cloneygonnell, as shown (plate XLVII., fig. 202), and there were several raths of minor importance. In 1862, Dr. Malcomson of Cavan, carefully examined the locality, and made a sketch of the general appearance of the ancient lake bed and neighbourhood (fig. 203), as well as a representation of the section of the larger crannog where cut by the railway (fig. 204). The piles or stakes were arranged in two circles, one within the other, the diameter of the greater one being one hundred and twenty feet, and that of the other ninety feet. The piles in the outer circle were very numerous, and in some instances driven in close proximity to each other; a few appeared about three feet above the surface, and upon being withdrawn and examined were found to have been carefully pointed. The stakes in the inner row were not so numerous; some of them were of oak, others being of sallow or other soft wood. Within the stockade were observed two small mounds, one at the north, the other at the south. Corresponding with the depression between these, and three feet under the soil, was discovered during the excavation a flat stone four feet square and three inches thick, resting on a number of upright blocks of oak; this, no doubt, was a hearthstone. The most elevated point of the mound, towards the south of the island, had a crater-like appearance. Besides the wooden stakes which entered into the formation of the circles, others appear to have been laid horizontally, their beam-like ends showing at that part of the enclosure which was disturbed by the passage of the railway. On

exploring the crannog, and when the excavations had been carried to the centre, the cut surface presented from above, downwards—

1st. *Clay.*

2nd. *Black and grey ashes, with small stones and sand.*

3rd. *Bones and ashes, with lumps of blue and yellow clay.*

4th. *A quantity of grey ashes, and*

5th. *The horizontal sleepers, or stretchers, and hazel branches resting on the peat bottom.* (Plate XLVII., fig. 204.)

The superficial soil was gradually removed in order to expose the original flooring and examine its peculiar arrangement. During the removal of this stratum the workmen turned up a few antique specimens, amongst them portion of a glazed crucible, and a large mass of brownish metallic dross, quite convex on one surface. The principal stretchers—about forty in number—which composed the flooring were of black oak, in a tolerable state of preservation; each plank was from six to twelve feet in length, and from six to twelve inches square. They were laid down so as to extend lengthways from the circumference towards the centre, forming a number of radiæ somewhat like the spokes of a wheel; their outer ends

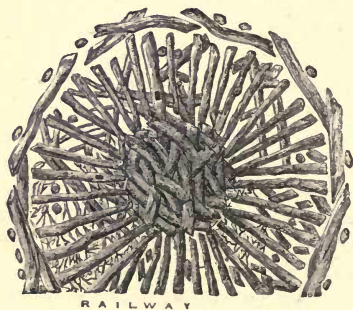


Fig. 205.—Plan of Crannog, showing the radial arrangement of the timbers.

were kept in position by slender crooked trunks of oak-trees forming a kind of circle, these again being fixed into their places by the outer row of stockades. The planks were not in close apposition, and the spaces so left were filled with thick branches of willow, deal, and hazel, with the bark on; many of the branches extended underneath the sleepers, thus separating them from the

peat bottom. The branches were for the most part rotten, and easily broken down. Hazel nuts were found here hard and brown, as if but just fallen from the tree. When the peat was removed to a depth of two feet near the outer part of the enclosure, the space so left was immediately filled up with bog water. A similar examination made near the centre exposed a hard foundation of blue clay. The timbers composing the crannog appeared to have been roughly hewn, and were not joined together by nails or mortises; two of the stretchers, however, had mortises. This site was most thoroughly examined. In the same marsh, but nearer to the ruin of Tonymore Castle, there were traces of two other stockaded dwellings (plate XLVII., fig. 202), an elevated causeway leading from them to what had been formerly the mainland.*

* *Proceedings R. I. A.*, vol. viii., pp. 275-6, 290-2, 301.

The following articles, discovered in the large crannog, were presented to the Museum, R. I. A.:—The upper stone of a grain-rubber; a perfect quern, seventeen inches in diameter, its upper surface highly decorated; a flat circular stone disc or quoit, like some found in connexion with cinerary urns; three do., one-half inch thick, and three and a-quarter inches in diameter; a portion of the stone coulter of a plough, thirteen inches long, with an artificial hole near the broad end for attaching it to the beam; a mortar, eight inches high, by seventeen and a-half inches wide, decorated at the corners with grotesque figures; a stone mould, with the casting groove in the long axis; two weapon-sharpeners of a remarkably hard stone resembling quartz; eleven fragments of sharpening-stones, averaging from two and a-half inches to six inches in length, two of them perforated; a four-sided whetstone, twenty inches by three inches; a large oval stone, artificially smoothed on all its surfaces—like a web-polisher—it measures ten and a-half inches, by three and a-half inches; several smaller-sized do.; a curved, water-worn, dark-coloured stone, highly polished, probably a burnisher; a flat red touchstone, three and a-half inches long, formed of jasper, and used for testing gold; a portion of slate with three circular cavities; a stone half perforated; a small perforated stone like a “whorl”; five globular stones like sink-stones for nets; a stone bullet, three inches in diameter; three oval-shaped, artificially worked stones; a bone spoon (p. 140, fig. 194); four portions of combs; two large beads; a ferrule, solid at one end, and two and a-half inches long; a small, highly-polished pin, and a very perfect piercer of bone; two horns of red deer, both imperfect; ten large boar-tusks, and some teeth of ruminants; a ring of bronze, that had been probably part of a fibula—it was in an imperfect state; a ring, three and a-quarter inches in diameter; a large decorated bronze pin, seven and a-half inches long, and a smaller one that measured three inches; the head of a battle-axe of iron; a knife-blade, with perforated haft, eight and a-half inches, and a smaller blade, two and three-quarter inches in length; a globular piece of iron, two and three-quarter inches in diameter; the head of a small hammer; three fragments of rings, and eleven other fragments of iron, the former uses of which could not be determined; several pieces of slag; fourteen pieces of broken pottery—amongst them was part of a bowl or urn, unglazed, decorated on the outside with deeply-grooved lines, and with slight indentations on the inverted lip—it was formed of very dark-coloured clay, mixed with particles of white quartz or felspar; four small earthen

Cornagall.—*Ante*, p. 67.

Drumkeery Lough is situated two and a-half miles north of Bailieborough. In 1863 the level of this lake having been lowered, the fact became apparent that it had been, in olden times, the abode of a lacustrine population. Plate XLVIII., fig. 206, shows the former extent and shape of the lake. Near its southern margin there was an oval-shaped island, converted into a peninsula by the change in the water-level. The aspect of the locality is described, and also represented in an outline sketch, by Professor Harkness, the original island being shown (plate XLVIII., fig. 207) by the portion marked A, including the area B, while the present peninsula is indicated by the letters CCC. The crannog was situated on the peninsula, and the approach to it had been from the south, as indicated by remains of a stockade of birch piles, DD, extending from both sides of the entrance, whilst at the eastern corner of the latter was a large oak pile with a four-sided hole cut through it. Large vertical oak slabs, with interspaces of three feet between each pile, formed the sides of the entrance EE, the interspaces filled in with smaller slabs of oak inclined outwards; the strong vertical piles had been well secured; on examination it was found that about nine feet of their length lay below the then surface. The floor of the entrance F was formed of large flat stones, and underlying this rude pavement were pieces of cleft oak. The area occupied by the crannog was an Irish acre—the longer axis being nearly north and south—and it was enclosed by piling composed principally of birch, retaining the bark. These birch poles, on the end inserted into the ground, had usually a wedge-shaped outline; some of the smaller trees seem to have been cut down by a single blow, and driven into the ground without further sharpening. Piles of oak which also occurred in the crannog were much better pointed, tapering regularly in some cases from their extremity for four feet upwards. Round oak piles

crucibles of the usual shape, three of them very small; a pipe-clay vessel, manifestly intended for refining purposes; the bowls of two small pipes, commonly, but erroneously, denominated “Danish tobacco-pipes”; a flat, highly-coloured bead of amber, and a larger one of irregular shape; a small bead of enamel paste, showing a mixture of the colours red, yellow, and blue; also fragments of Kimmage coal-rings; parts of a bracelet, which seems to have been pointed at one end. Great numbers of hazel nuts were found throughout the crannog, and there was a barrel-shaped piece of wood, three and a-quarter inches long, hollow, and perforated with six holes; it had been used either in weaving, or as a net float.

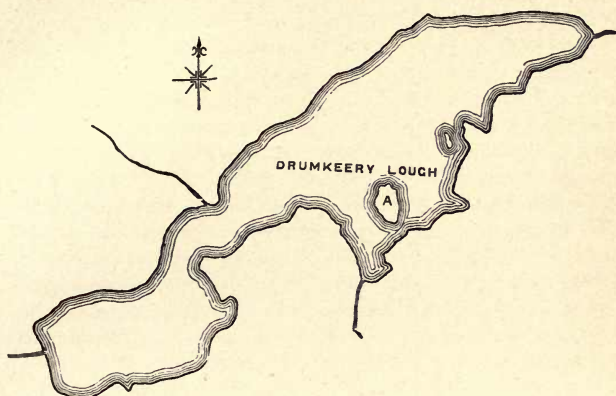


Fig. 206.—General Plan of Drumkeery Lake. A—Island with Crannog.
Scale 6 inches to one mile.

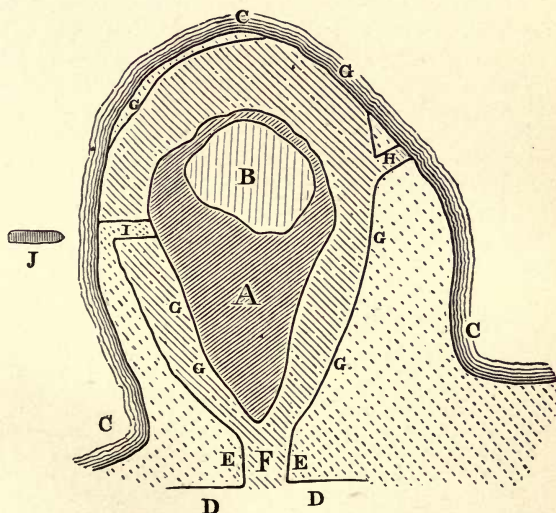


Fig. 207.—Plan of Promontory with Crannog. Scale, 1 inch to 60 feet.

were found in several parts of the stockade; whilst cleft oak was observed only at the entrance in one or two parts of the stockade, and in single piles here and there in the crannog. It has been computed that the number of piles used in forming and strengthening the construction must have exceeded 30,000. The stockade was composed of piles placed in close contiguity, without inter-spaces; and in the interior, near the piling, there was a layer of gravelly clay and large stones, varying from two inches to two feet in thickness, its object being to give a uniform level; and this comparatively narrow space was the only artificially elevated portion of surface in the crannog, which differed from most others previously met with in Ireland, in apparently not having required to be raised above the water; but there is evidence of the level having risen five and a-half feet since the period of its occupation. At the northern extremity of what had been the crannog was a space about a rood and a-half in size, B, occupied by fragments of burnt bones and charcoal—the kitchen midden of the place. This deposit, nine inches in thickness, rested upon the natural surface of the island, of which the entire area AB was flat, and before the lake was lowered stood two and a-half feet above the ordinary level. On the north side the supports for a landing-stage, H, were composed of two rows of piles that ran obliquely *outwards* from the girdle of piling G; and on the east side was another series of double piling, I, the piles about three and a-half feet apart, and they differed from the formation on the N. W. in extending *inwards* from the main stockade. Opposite to this, and firmly embedded in the oozy bottom of the lake, was seen a single-piece canoe, J, formed out of an oak trunk; the double row of piling extending inwards doubtless enclosed a “dock” destined to receive and secure the canoe when not in use.*

* In addition to the usual collection of bones, the articles obtained from the crannog were as follows:—A large stone, hollowed in its upper surface, used evidently for crushing corn, the rock forming this crusher, being coarse basalt, is foreign to the district; it appears to be portion of a block of columnar basalt, brought to the spot probably from the N. E. of Ireland. There was another large stone of a carboniferous grit foreign to the locality, evidently the upper stone of a grain-rubber; it was slightly convex on one side, and had an artificially-polished surface. Two round stones—the one of quartz, the other of carboniferous grit. Three pieces of spoon-shaped flint. A stone ring, made from the ordinary greywacke shale of the district; it was too small for the finger. Part of another ring, somewhat larger in size. A bead of glass, and one of amber. Portion of a jet bracelet. Some articles of brass, comparatively modern. Fragments of

On the north side of the lough, nearly opposite this crannog, there were traces of another of smaller size. Birch and round piles of oak were distinctly recognizable; these occurred also at various intervals along the margin of the water, indicating the former existence of several lake dwellings. Along the shore have been discovered traces of many ancient fireplaces* more than six inches above the present surface of the lake, but five and a-half feet below its level previous to drainage; the largest of these consisted of a heap, thirteen feet in diameter, of small flattish, angular-shaped stones resting on peat; the small stones had a reddish colour, and consisted of fragments of greywacke shale. Immediately contiguous to this heap of small stones was another, about four feet in diameter, made up of large stones, some a foot and a-half in breadth. These larger blocks exhibited no trace of the action of fire which had given to the smaller fragments their red colour.†

Lough Ramor.—There are numerous islands on this lake, which is five miles in length, and from a mile to a mile and a-half in breadth. In the *Irish Annals* this sheet of water is said to have burst forth A.M. 2859, and in A.D. 845, King Malachy is reputed to have here attacked and destroyed an island on which rebels had fortified themselves after joining with the Danes, and from whence they continued to commit depredations on the neighbouring districts. On its shores was found the curious stone mould figured *ante*, p. 73; a bronze vessel like a modern pot, eleven and a-half inches high, and the same wide, with small handles attached below the rim, and one foot wanting; another bronze vessel in a perfect state, with three transverse raised lines on sides, trident-shaped ornaments spring from the base of each leg, angular handles attached between junction of rim and conical pot, fifteen and three-quarter inches high, twelve across mouth. These latter articles were both found in Lough Ramor, and in Museum, R. I.A. they appear as Nos. 40 and 43.

pottery (undescribed). A crucible. An article formed of baked clay, two inches in length by one in breadth, having one of its surfaces convex, and the other concave; it bore the mark of a cross near one of its extremities. Several pieces of iron ore; and a bronze axe that was discovered in 1843 on the shores of the lake in the immediate vicinity of the crannog.

* Fireplaces on shore of lake—see *ante*, pp. 90 and 191.

† *Archæologia*, vol. xxxix., pp. 433–440.

Lough Crannog.—Judging from the name, there was formerly an artificial island in this lake.

Lough Aconnick and Derreskit Lough.*

At a meeting of the Royal Historical and Archæological Association of Ireland, held at Portrush, July, 1885, a paper on the crannogs of the county Cavan was read by Mr. Seaton Milligan of Belfast, who stated that he had at various times visited several of those structures, which he considered to be more numerous in Cavan than in any other county in Ireland, owing perhaps to the great number of lakes scattered over its surface. He described some eleven sites that lay within a radius of seven or eight miles from the town of Cavan; and was of opinion that their outer row of piling was generally formed of oak, and the inner circles of smaller stakes of hazel and willow. A looped spear-head of bronze was shown by him, and he minutely described two canoes dug out of a bog on the shores of a lake containing a crannog, and situated near Heath Lodge. A bronze rapier found near a crannog in Lough Oughter was also exhibited by him, and a description given of the castle of the same name, where Bishop Bedell was protected by the Irish during the troublous times of 1641. This castle stands on an island surrounded by piling, and bearing the impress of having been an ancient crannog whereon the more modern structure was erected (*ante*, p. 155).

The exact locality of two sites in the province of Ulster still remains undefined, i.e. *Loch-da-damh* (*ante*, p. 158), and the crannog attacked by Sir Henry Sidney in 1566 (*ante*, pp. 146-8).

* *Proceedings R. I. A.*, vol. v., Appendix.

PROVINCE OF LEINSTER.

COUNTY MEATH.

Lagore, otherwise *Dunshaughlin*. (See *ante*, pp. 23–5, 157, for the discovery and historical account of this celebrated crannog.)—In the kitchen midden were bones of the *Bos longifrons*, *Bos frontosus*, four-horned goat, wolf, dog, bear,* red deer, wild boar, sheep,



Fig. 208.—*Fusus antiquus*.

fox, horse, &c.; also a sea-shell (*Fusus antiquus*), here figured one-third its real size. This relic is preserved in the Petrie Collection, R. I. A. It is curious to find a shell of any marine species within the bounds of a crannog

situated many miles inland; and with it were shells of limpets and baccinums, together with numerous portions of fictile ware.† Around the crannog were several single-tree canoes, and near the centre there were two human skeletons lying at full length; the country people would not allow them to be removed; one specimen was, however, secured, and deposited in the Museum, R. I. A.‡

Bohermeen.—*Ante*, pp. 82 and 171.

* *Journal Royal. Hist. and Arch. Asso. of Ireland*, vol. i. (New Series), p. 230.

† *Collectanea Antiqua*, vol. iii., pp. 35–44.

‡ *Cat. Mus.*, R. I. A., p. 223.

The following are a few of the articles found on this site, and nearly all are now in Museum, R. I. A. :—Two double-edged swords of iron. A curved blade. A peculiar single-edged weapon. An iron ring and chain, supposed to have formed portion of a manacle (plate VIII., p. 61). Two spear-heads in fine preservation (p. 63). An axe-head (p. 68). A bowl and a ladle (p. 85). A small single-edged knife. An iron pipe, with hook attached. A bronze object of unknown use (p. 143). Three armillæ of rude fashion; one of them formed of a thin plate measuring rather more than half an inch

COUNTY WESTMEATH.

During the working of the Commission for the Arterial Drainage of Ireland a crannog was discovered in this county, but its site is unidentified.

Joristown.—In this townland, parish of Killucan, there would seem to have been formerly a crannog in the river Deel, for when deepening the bed of the stream a bronze spear-head was found five feet below the surface, and in the immediate neighbourhood of an artificial island, which is described upon the label attached to this weapon in the R. I. A. as “a little mound, formerly an island, which contained a quantity of bones and some iron spears.”*

Ballinderry, in the parish of Kilcumreragh, barony of Clonlunan, is situated not far from Moate. When, as the result of drainage, the water of this lake fell, it was discovered that it had formerly contained a large crannog surrounded by a stockade of oak piles, around and on which was an immense quantity of the antlers of red deer, and fractured bones of deer, oxen, sheep, and other mammalia, all afterwards sold as manure. Many objects of archæological interest found here were obtained by various collectors—some are in the Museum, R. I. A., and others have been figured in the *Journal of the Royal Historical and Archæological Association of Ireland*. The first notice of the crannog occurred in

in diameter; the extremities slightly recurved. An ornament of mixed metal, and an enamelled plate of iron (p. 138). Portions of a small ring fibula, with cavities in the metal in which enamel appears to have been encrusted. Numerous bronze pins of various sizes and fashion. A skean or dagger (p. 65). A thin triangular blade, corroded at edges; the lower portion prolonged into a tang; the bevel on the edge, continued round the flat handle-plate, shows that the article was cast and not subsequently hammered out. A very rude piece of bronze somewhat resembling a broad arrow. A sling stone of quartz rock. An oblong or natural kidney-shaped stone, five inches long, and rounded at the extremities. Several whetstones. Two bone needles or bodkins, perforated at the extremity. A double-toothed comb, rudely ornamented with lines and concentric circles; and other combs, or fragments of same, one of them being a small perfect specimen, four inches long. A horn tine, polished at top. A very small four-sided drinking vessel of horn, two and a-half inches high. A polished leg-bone of a deer, curiously carved. A wooden spike, broad in the middle, and sharpened at each end; it is supposed to belong to the weapon class. There were also amber, jet, glass, and enamelled beads, now in the Museum, R. I. A.

* *Proceedings R.I.A.*, vol. v., p. 55.

1844, when Mr. Hayes forwarded to Sir W. Wilde a description of it, together with a plan and map of the locality. Two single-piece canoes were disinterred from this site, and portion of an ancient harp of wood. The pendent amulet of stone, figured p. 115, was found here.*

Ballinacarriga.—*Ante*, p. 136.

Lough Owel.—A canoe was here found, and a crannog is said to exist beneath the waters of this lake, opposite Portlenon. It is situated on a shallow, still called by the fishermen "the Old Crannog."

COUNTY LONGFORD.

Castle Forbes.—*Ante*, p. 33.

Aughamore, near Granard.—At this place was said to have been discovered a curious wooden hut, constructed of black bog-oak, which lay under water in an exhausted bog at considerable depth beneath the surface. It measured twenty-three feet by ten, and had eight very strong beams supported by cross-beams firmly jointed; the side-beams mortised, as if intended for uprights. It was taken asunder in the process of raising, and as far as can be ascertained it has never been viewed by any person competent to form an opinion on the matter, so that no conjecture can be hazarded regarding the age or purpose of this so-called hut.

* And also the following antiquities :—A small stone, on which was carved a headless naked human figure. A sandstone ring. Several whetstones. A dark-coloured piece of shale and sandstone, three inches across, marked on the surface like the "game stones" in the Museum, R. I. A. A mould, formed of agalmatolite or potstone; on one side it had a circular cast for a harness stud. A decorated bone comb, and portions of eight others. Many curious bone pins (described *ante* "Articles of the Toilet," &c.). A spatula-shaped bone (*ante*, p. 140). Flat pieces of ornamental bone (p. 139). A bone knife or skean, highly decorated on the handle and along a portion of the blade. A knife and fork of bone, colour dark brown; the handles are square, and decorated with the domino pattern. Several miscellaneous bone articles, consisting of pins, handles, knives, &c. Bronze tweezers, and several ornamented bronze pins. An admirably-designed brooch, or brooch-pin, of *findruin* or white bronze; its ring, two inches in diameter, was a mass of spiral ornamentation, pointing to an extremely early age. A very perfect short-bladed bolt-head, with narrow loops. A narrow dagger-blade, with high mid-rib and ridge on handle-plate. Amongst the iron remains there occurred, swords, varying in length from six to eighteen inches, axe-heads, spear-heads, shears, bodkins, and many small articles of domestic use.

COUNTY LOUTH.

Iniskeen.—*Ante*, p. 158.

Ballyhoe Lake.—A stone pestle, an amulet made of black stone, and a flat circular stone, were here found,* and from the bed of the river *Glyde* were obtained a portion of a double comb and two beads of bone, the one seven-eighths of an inch in diameter, the other one-half inch wide.

KING'S COUNTY.

During the working of the Commission for the Arterial Drainage of Ireland, a crannog was discovered in this county, locality not mentioned.† “Just above the Pass Bridge, at the east end of Droughtville demesne, is a marsh, called the ‘Muddy Lake’ on the Ordnance Map, but by the people, the ‘Island Lough.’ On the north side of this marsh there is a small island, on which are the remains of *Kiltubrid Castle*. Between the castle and mainland, on the north side, there is an ancient causeway about one hundred yards in length.” A new channel made by the Drainage Commissioners in 1852, crossed this causeway within thirty yards of the castle. In the excavation several large pieces of oak were found, having evidently formed portion of a framework, as the mortises were tolerably perfect. Here also were discovered an article formed of wood, a pan of white bronze or *findruin*, three coins of the reign of Charles I., two of Elizabeth, and numerous others worn and defaced.‡

* *Proceedings R. I. A.*, vol. v., p. 417.

† Not far from Tullamore, on the direct route from the crannog of Lough Annagh to Killeigh, and under a considerable depth of bog, was found a very fine bronze pin, eleven inches long; it tapered to a sharp point at the end, and was headed with a disc, one and a-half inches in diameter, having an obtusely pointed boss in the centre.

‡ *Proceedings R. I. A.*, vol. v., p. xxxvii.

QUEEN'S COUNTY.

Grantstown.—About the year 1860, the permanent water-level of this lake being lowered six feet, disclosed an artificial island; the stakes forming the enclosure were very sharply pointed; those laid horizontally in the centre were grooved and nailed together. R. Langrishe—who had visited Grantstown, and was often on the lake—states that the country people spoke of these remains as “the castle”: they said “it had sunk.” No canoe was found, the water in the immediate vicinity of the crannog being upwards of eighty feet in depth. The only relics discovered were an iron hasp, two nails with large heads, an arrow or spear of charred wood, a polished piece of bone resembling a pin for the hair, having grooved circles all round it at top, an enormous quantity of animal bones and charred timber, a lump of gypsum, also a rude box, about four and a-half feet in length, which contained two small bones.*

Lough Annagh, situated in the barony of Tinnehinch, separates the King's from the Queen's County; it is three miles in circumference, and the waters abound with pike, roach, and perch. In the middle of this lake, where most shallow, oak framing was visible, and a tradition existed that “in the war of 1641 a party of insurgents had a wooden house erected on this platform, whence they went out at night in a boat and plundered the surrounding country.” The site was suitable for such a retreat, the lake having formerly been embowered in forest. Queen Elizabeth thanked one of her commanders for conducting a detachment of horse in safety through the surrounding woods of the district. T. Stanley, who visited the place in 1868, observed an island-like patch rising a little above the water-level; of piles then visible he counted upwards of one hundred and twenty, arranged in lines, with spaces of two feet between the alignments, the average diameter being about five inches. The island sloped down gradually in every direction, and the piles—apparent only on one side—accommodated themselves to the slope, and were in general only a few inches

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. v. (New Series), pp. 228-9.

above the surface of the water. Four piles had been uprooted, and thus showed that originally they were pointed with a sharp instrument, possibly with small iron hatchets similar to those found on the spot a few days previous to T. Stanley's visit. Between the island and the shore there was a half-submerged space, about thirty feet in diameter, strewn with stones and broken querns; a few piles appeared among this debris. There was a lesser tract closely adjoining, where well-burnt brick, both whole and broken, were mingled with the stones. On the mainland, near



Fig. 209.—Part of Lough Annagh, enlarged from the Ordnance Survey six-inch Map, showing Sites of Crannogs.

the crannog were traces of a curious bog-pass, made like an American corduroy road, and there can be little doubt of this being "the tougher of Malahone," mentioned by Major Edward Wood in his despatch, giving an account of an action fought by him on the 4th May, 1691,* when he defeated a portion of the Irish army on a hill above the lough. It is more than probable that the crannogs in question had either been the head-quarters of the Irish force, or that after their defeat the fugitives took refuge on the islands, for in the year 1868, the Rev. J. Graves saw at Tullamore articles purchased from the men who had picked them up near the crannog. The items first named seem to tell their own story.†

* "A Letter from Major Wood," &c.; also, Story's *History*, part. ii., p. 73.

† The "finds" were as follows:—An iron cuirass, ornamented with sunk lines and projecting pigeon-breast medial line; it was furnished with hook and staple to fasten

During the progress of drainage operations, five canoes became exposed to view; they lay at the bottom in the same part of the lake, with their bow in a north-westerly direction, all having the same inclination or dip in the sandy or muddy deposit. A drawing was made, with measured plans and sections of the most perfect of the "dug-outs"; it was, however, split or fissured from starboard right through to the stern; it measured twenty-two feet seven inches over all, its greatest beam being thirty-one inches. It was formed out of one large trunk of oak, and appeared to have been hollowed by means of fire; close inspection showed that edged tools had been used in finishing it. The bottom (two inches thick) was perfectly flat, and without keel, and its perfectly smooth sides inclined outwards from the bottom. Two stout ridges of solid timber, one near either end of the "dug-out," served to prevent the sides from collapsing, and between them and the bow and stern cavities had been hollowed out of the solid trunk, seemingly for the purpose of rendering the craft more buoyant. The port side was several inches lower than the starboard—manifestly the effect of accident. There were no traces of thwarts or benches; the sides had neither row-locks nor thole-pins; the canoe must therefore have been intended for propulsion by paddles. A horizontal hole, about one and a-half inch in diameter, had been bored in the most forward and highest part of the stern.

This entire fleet of ancient boats, together with several querns and bones found in the locality, were, in 1868, at Brittas, the residence of the Right Hon. General Dunn.*

Cullina.—Mr. Louis Orr states that in 1872 he saw exposed by turf-cutters in the bog of Cullina, about three miles from Maryborough, the remains of a primitive wooden dwelling. "The building lay from ten to twelve feet beneath the original surface

the "back-piece" to the "breast." This piece of armour was undoubtedly of the seventeenth century; a matchlock, barrel thirty-six inches long; a gun-barrel of small calibre; three pistol-barrels; an iron halbert—a fine sixteenth century specimen; an iron spade, trowel, chisel, axe, and door-bolt; an iron skian or dagger, thirteen inches long, and another, four and a-half inches long; a small iron knife; two sword-blades, twenty-six inches in length; a nondescript article of iron; three curiously-wrought iron keys; a fragment of a bronze ornament; two iron spurs of antique shape; a "spindle-whorl" of stone; a bronze ladle; a bronze spear-head, and a very curiously-shaped brick.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. i. (3rd Series), p. 157. *Ibid*, vol. ii. (New Series), pp. 71-5.

of the bog, and consisted chiefly of four upright posts, which formed the angles of a square of six or seven feet across. These posts were about six feet in height. A quantity of timber, consisting of planks and trunks of trees, principally oak, lay scattered around, and some of the woodwork appeared to have been charred by fire. Within what had been the area of the hut was a trough made of oak, measuring three feet in length by two in breadth." A piece of thin metal (whether bronze or iron is not stated), very much corroded, was also discovered. It was supposed to have been a sword.

PROVINCE OF MUNSTER.

COUNTY TIPPERARY.

Annagh, in the parish of Kilbarron.—There is here (as stated by the Rev. James Graves) a piled crannog, situated at the extremity of a shallow spit—submerged except when the river Shannon is very low—and at the outlet of a great circular spring or small lake, six or seven hundred yards in diameter, which runs into Lough Derg. This site has not yet been examined, but a map of the locality is here given.

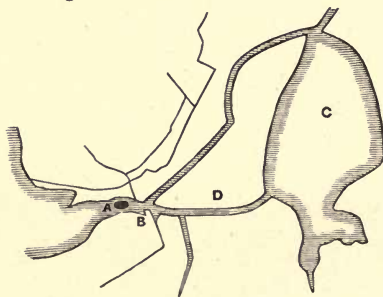


Fig. 210.—General Plan of the neighbourhood of the Crannog of Annagh.

A. Piled Crannog. B. Shallow Spit, usually submerged. C. Spring, or Lough.
D. Outlet into Lough Derg.

Monaincha (the island of the bog) is—as stated by W. F. Wakeman—an artificial construction, on which had been subsequently erected a church in the Hiberno-Romanesque style. It is to the present day surrounded by bog.

Lough Nahinch (the lake of the island).—In the year 1810 the waters of this lake, situated near Roscrea (at the junction of King's

County and Tipperary), having been lowered four feet by drainage, a considerable portion of the land it once covered (fig. 211, *b b b b b*) was laid bare, and the site of a crannog became apparent. The lake is now much reduced in dimensions, but the surrounding ground being low, its expanse in winter (*a a*) is greater than in summer. Mr. Trench of Cangort Park—although at the time of

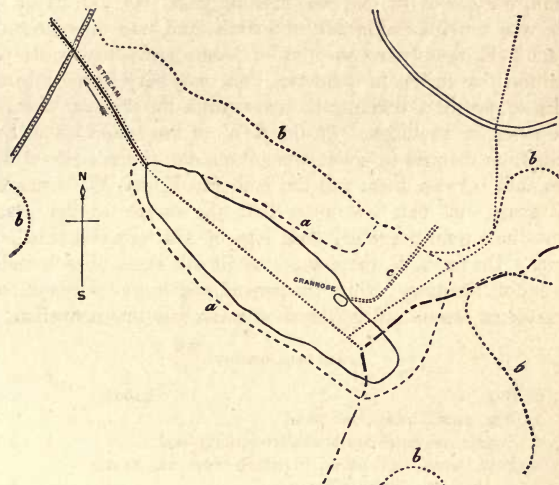


Fig. 211.—Map showing former and present summer and winter level of Lough Nahinch.

its discovery unaware of the real nature of the construction—gave the following graphic description of it:—"The bottom (of the lake) consists of blue shelly marl, which seems to extend to a great depth, and when dry it is exceedingly light. In the highest part of this reclaimed land, which is about the middle of the old lake, there is seen a circular part resembling in shape the top of an immense tub, about sixty feet in diameter. The large planks which form the staves are from one to ten feet (?) broad, and six inches thick, quite straight as far as it has yet been possible to trace them downwards; none of them have been raised without cutting them." There was no appearance of either axe or saw having been used in their formation.*

* Wakefield's *Account of Ireland*, vol. i., p. 94.

Since the change in the water level, the original aspect of the crannog has been completely transformed, its circular shape changed, many of the piles removed, and where the water was deep a quay was built for the convenience of landing turf from the southern shore. On the east there was a track into the mainland (c), and at its junction with the quay at the S.E. of the island, was one of the old oak sheeting piles. On the north, oak piles were noted forming part of a circle, and from them, running S. and S.E., there were two rows of round perpendicular ash piles (two feet five inches in diameter), that may have formed part of walls, or partitions dividing the space inside the circle of sheet piles into rooms or dwellings. On the N.W. of the island, about three yards from the present shore, were also some of the circle of sheet piles, and between them and the land ran E. and W. beams four feet apart, and four feet lower than the surface of the island: above these were irregularly-laid logs of oak, mingled with large stones. On the S.W. there was a set of oak sheet piles bounding the end of the quay. Only the general section of the island could be made on account of the inrush of water into the excavation.

GENERAL SECTION.

	ft.	in.
6. Bog, (about)	0	6
5. Bog, ashes, bones, and nuts,	1	6
4. Stones and large oak sticks irregularly laid,	0	6
3. Peat, bones, and ashes, in which were oak beams lying in different directions,	1	6
2. Oak beams, about four feet apart, and laid nearly E. and W.,	0	6
1. Peat, wood chips, and bones, (over)	1	0
	<hr/>	<hr/>
	5	6

The artificial work, measured from the present surface, was more than five feet six inches in thickness. On the beams (*layer 2 in section*) there seemed to have been a basket flooring, but of this there could not be certainty, owing to the depth of water in the excavation. In connexion with them were observed *wicker-walls* made of hazel rods, and where these crossed the oak beams there were round holes through the latter for the stakes to pass through. In the vicinity of these beams a small rude stone implement of Silurian grit was found, but so rotten that it broke when handled. The beams in *layer 3* were charred on the under

surface, as if they had formed the rafters of an edifice destroyed by fire. Near the north of the island, immediately over these charred beams, there was a plank pointing N.W. and S.E.; it was ten feet long, twenty inches wide, and two inches thick; at about one foot nine inches from its N.W. end there were two holes through it, running N. and S. in a line with the north and south piles seen on the N. shore, and on each side of the plank there were upright stakes ranging in the same direction. The conclusion may be drawn that the island was occupied at two distinct periods—the first being when the E. and W. beams formed the floor of the habitations which seemed to have been destroyed by fire: afterwards the oak sticks and stones—irregularly laid—were placed as a floor for new dwellings, and between the periods it must be supposed that the water of the lake had risen considerably.*

COUNTY WATERFORD.

Ardmore Bay.—Here, in the year 1879, a submarine crannog was discovered on the shore under high water-mark, where a small stream runs into the sea between Ardmore chapel and the old coastguard houses; this little stream described a semi-circle around the crannog at low water, but at high water all was submerged; a bank of shingle had covered it in whole or in part, but the rapid denudation going on from the action of the sea had removed the shingle and is wearing down the bed of turf, so that it is quite possible no remains of the crannog may be left. Its greatest diameter was from ninety-two to one hundred feet: the turf was over nine feet



Fig. 212.—Plan of Submarine Crannog at Ardmore. One-half the scale of fig. 213.

* *Proceedings R. I. A.*, vol. ix., pp. 176–9.—H. B. Trench and G. H. Kinahan.

deep where the piles were driven in; these were of oak rudely pointed and forming a double enceinte—irregularly oval in shape—of which the inner row of piles generally sloped slightly inwards, and those of the outer row—closer together and more numerous than the inner—sloped outwards. In many cases they stood above the turf, and were for the most part large—as thick as a man's thigh. Several smaller piles were in the S.E. quarter of the crannog, probably the remains of wattled partitions. To the N.E. the sea denudation had been very great, and there, at the surface, were found many roots of bog-timber, similar to those which near the centre of the crannog lay more than two feet below the level of the solid peat.

SECTION INSIDE EAST MARGIN OF CRANNOG.

	ft.	in.
8. Peat,	1	0
7. Thin stratum of bluish clay with worn pebbles,		
6. Peat,	1	0
5. Thin stratum of bluish clay and an angular piece of limestone,		
4. Thin stratum of charcoal,		
3. Peat,	2	0
2. Clayey peat,	3	0
1. Very clayey peat full of small oak roots,	0	6
	<hr/>	<hr/>
	7	6

In the peat Nos. 1, 2, and 3, roots and twigs of oak occurred, and in the peat Nos. 6 and 8 were many twigs and boughs of oak, also stouter pieces of willow. The cross-section taken along the

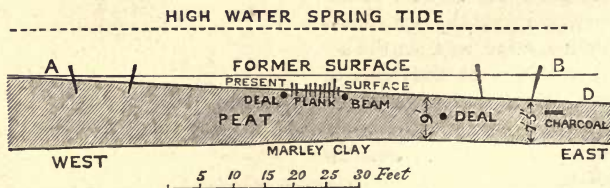


Fig. 213.—Section of Submarine Crannog at Ardmore.*

* Omitting the ideal restoration, fig. 213 is reproduced from a Paper by R. J. Ussher and G. H. Kinahan, as is also fig. 212.

line AB shows the present surface of the ground, with the oak piles, hazel stakes, planks, beams, &c., found in the excavation, also the high water-mark of average spring tides, and the depth of the peat—where proved. Any implements, or other relics that may have remained in this site, must have been long since washed away. A few antiquities are said to have been discovered in the Ardmore peat, but not within the bounds of the crannog, so that some charcoal found in one spot, two feet below the surface, and the “kitchen midden”—which at the close of 1880 became exposed by the action of the sea—form the only traces remaining of man’s former presence in this abode.*

On Arranmore island, in the Bay of Galway, the Rev. W. Kilbride discovered habitations and artificial structures extending from above high water-mark to under the low water-level of spring tides: from this it may be inferred that man existed in Ireland before the last subsidence of the land. The *Irish Annals* contain much that was formerly looked upon as fabulous relations of in-breaks of the ocean, but which may be reasonably held to be the reflex of traditionary tales having some foundation in fact. Geologists assert that at one time Great Britain and Ireland were connected with the Continent by a great level plain, over which roamed the *Megaceros*, so that even within the period of the existence of this animal, whose contemporaneity with man may be considered beyond dispute, both seas and continents have changed.

There are proofs of elevation and subsidence in the Bay of Baiæ, where the Temple of Jupiter Serapis “affords in itself alone unequivocal evidence that the relative level of land and sea have changed twice at Puzzuoli since the beginning of the Christian era; and each movement, both of elevation and subsidence, has exceeded twenty feet.”† It is difficult to decide whether the crannog at Ardmore had, like the Temple of Jupiter, subsided with the land, and had again been elevated: the denudation of the crannog may point to the possibility of the latter hypothesis.

* *Journal Royal Hist. and Arch. Asso. of Ireland*, October, 1879. *Proceedings R. I. A.* (2nd Series), vol. ii., December, 1880.—R. J. Ussher and G. H. Kinahan.

† Lyell’s *Principles of Geology*, vol. ii., p. 164.

COUNTY LIMERICK.

A crannog was discovered in this county during the working of the Arterial Drainage Commissioners. Site unidentified.

Coolcranoge.—*Ante*, p. 28.

Knockanny.—*Ante*, p. 156.

Lough Gur.—*Ante*, pp. 6, 25–6, 83, 150, 156, &c. There was

found here a remarkably fine bronze spear-head, now in the collection of General A. Pitt Rivers, F.R.S. The lower part of its socket was ornamented with gold (see figs. 214 and 215). Homer more than once mentions the gold ring, or ferrule, around the spear-head of Hector. The two following relics—also from Lough Gur—may be seen in the British Museum:—(1) A moiety of a stone mould for casting spear-heads and other pointed objects of various sizes: “it is a four-sided prism, six and a-half inches long, and two and a half inches broad at one end of each face, and one and three-quarter inches at the other. A second similar prism would, it has been observed, give four perfect moulds for casting spear-heads slightly varying in form, but in each case provided with side-loops. These loops are, as usual, semicircular in form on



Fig. 214.—Spear-head of Bronze from Lough Gur. One-half real size.



Fig. 215.
Ferrule, showing Gold Ornamentation. Full size.

the mould, and were no doubt destined to be flattened in the usual manner by a subsequent process of hammering. There is one special feature in this mould, viz., that at the base of the blade there is a transverse notch in the stone, evidently destined to receive a small pin which would serve to keep the core for the socket in its proper position. There is a similar transverse notch in one of the smaller moulds for the pointed objects”* (fig. 216). (2) An iron sword, which

* *Ancient Bronze Implements of Great Britain and Ireland*, p. 436.

is ornamented on the blade thus, ||| ⊕ ○ ⊕ |||. The cross-like form does not necessarily denote that the weapon belongs to

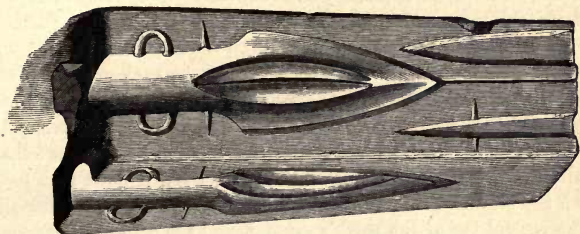


Fig. 216.—Stone Mould for casting weapons, from Lough Gur.

the Christian era, for an almost similar symbol ⊕ appears in an ancient Mexican ms. now in the Belfast Museum.*

COUNTY CLARE.

Effernan.—In the year 1873, a gentleman desirous to provide his residence with an ample supply of water, decided on bringing it down from this lake, situated at a distance of about two miles, and at a level of three hundred feet above his house. Before a syphon could be placed in working order, it was necessary to reduce the height of the water much below its ordinary summer level,

* In the Museum, R. I. A., Nos. 297 to 302, are stone celts from this crannog, and amongst the miscellaneous bone articles Nos. 1 to 4, and 18, are bone hafts or handles, one of them stained black, and ornamented by spiral and interrupted grooves. There are two horn tines, artificially shaped, and No. 40 is a shank-bone of a sheep or goat, stained black, highly polished, and perforated at one end. Besides the celebrated bronze shield described (*ante*, p. 71), the following antiquities are recorded as having been discovered in this site:—A long, narrow, spear-head of bronze, in excellent preservation, the socket—circular in form—measuring nearly twenty-three inches in length, and two one-eighth inches in breadth at base of blade, along which there is a ridge with a feather edge running into flat compressed loops at the junction of blade and socket. A bronze spear-head, slightly defective in socket, but blade perfect; it was found with a portion of the charred handle remaining in it. A very small dagger-blade of bronze, with wide notches in the handle-plate. A bronze tube, probably the ferrule-end of a spear, and having a rivet-hole."—*Cat. Mus., R. I. A.*, pp. 487, 507. 517.

which was effected by clearing and deepening the outlet. When making the cutting the labourers, at about six feet below the surface, came upon a densely-intertwined layer of roots of a pine forest; the trees had evidently attained maturity in the position in which they were found, and they extended also under the water. The forest must have been very ancient, as no lake could have been formed there at the time of its existence. The roots were in the exact position in which the trees grew, and these, with the direction to which their stumps pointed, seemed to indicate that, while the present prevailing wind is the S.W., it must then have been the N.W. Hills and valleys guide the aerial currents, and some convulsion of the earth's crust may have altered these, and formed the present lake. When, by drainage, the water had been reduced nine feet, there was laid bare a low neck of land stretching into the lake, its outer end being highest. Along this neck of land ran, in irregular order, a row of posts, from four to six inches in diameter, and which, in general, only just topped the ground. At the extremity of the promontory was an unmistakable crannog, circular in form, and with wooden piles surrounding the exterior; the floor was of stone; and one large flag—seemingly the fireplace—took up the greater part of the interior space. Unfortunately, no one specially interested about lake dwellings was at the time aware of this discovery, and the syphon being completed, crannog and causeway became once more submerged.*

* *Journal Royal Hist. and Arch. Asso. of Ireland*, vol. v. (4th series), pp. 336-9.—W. F. Wakeman.

PROVINCE OF CONNAUGHT.

COUNTY GALWAY.

Ballinlough is situated in the barony of Leitrim, and parish of Ballinakill; in it were four islands, bearing no distinctive appellation; but G. H. Kinahan, who made the explorations, named them, respectively—*North Island* (1), (fig. 217), *West Island* (2), *Middle Island* (3), *East Island* (4). In the general view of the

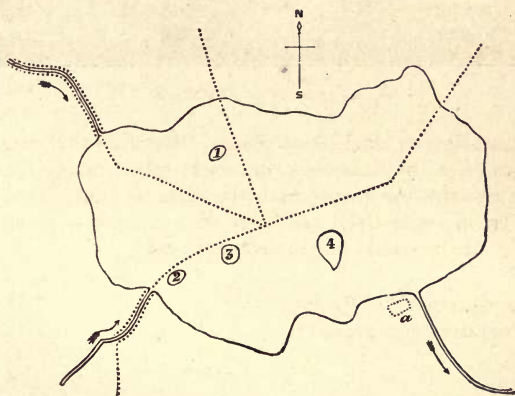


Fig. 217.—Plan of Ballinlough.

lake (fig. 218), *North Island* (1) is in the far distance; near the mouth of the rivulet is *West Island* (2); to its right lies *Middle Island* (3); whilst a glimpse of a portion only of *East Island* (4) is to be seen. The horns and skulls of numerous red deer have been discovered at various times in the lake-bed; also the head and

horns of a *Megaceros hibernicus*. *North Island* (1) is nearly one hundred yards from the shore, to which, during the dry season, it was connected by a reedy bank, and, when visited, was a foot above the surface of the water; the excavation was stopped on finding the stratum undisturbed, and no traces around of ancient



Fig. 218.—General View of Ballinlough.

dwelling, either of stone, or of piling. *West Island* (2), twenty-six yards from the shore, was connected with it during the dry season; its form was a rude oval, the diameter thirty-three and fifteen yards, respectively, and there were flat stones round the outside. An excavation in the centre showed:—

	ft.	in.
Bog and clay, with a few bones,	2	0
Wood ashes, full of charred bones,	over 1	6
	<hr/>	
	3	6

Middle Island (3) lies nearly eighty-four yards from *West Island* (2); it was almost circular, its diameter being thirty-two yards; and outside, for a width of nearly twelve feet, it was lined with regularly-placed flat stones. When the water was low, piles could be distinctly observed around it; but the porous nature of the materials, joined to the height of the water at the time, precluded a

systematic examination. A small excavation near the western extremity gave the following section :—

	ft.	in.
6. Peat and clay, about	0	9
5. Peat and stones, with a few bones,	0	9
4. Wood ashes and peat, quantities of unbroken cherry stones, broken hazel nuts, broken animal bones and teeth, also a ball of red colouring matter,	2	6
3. Basket flooring, one and a-half inch thick,	0	1½
2. Oak beams,	0	6
1. Peat, over	0	6
	5	1½

The oak beams were sawn, not split ; they seemed to run nearly N. and S. ; through them, at distances of nine inches, were pairs of dowels, and at intervals of nine inches were ash poles, two and a-half inches thick, through which the dowels passed and secured the flooring beams. The wickerwork flooring was formed of hazel rods ; and the crannog would appear to have been divided into huts, or apartments, as portion of a row of ash piles was observable. Below the beams there was a stratum of peat ; but in consequence of the rapid influx of water, the working had to be abandoned at this point. No relics were discovered, owing probably to the narrow area of the excavation. *East Island* (4) was of irregular pear-shape, sixty-seven yards by fifty ; it lay three hundred feet from the southern shore, and seemed to be partly natural, partly artificial. An excavation in the centre gave four feet of peat, and under it was shell marl, whilst for a radius of about twelve feet around the island there were layers of regularly-placed stones, small and flat ; also at the S.E. shore there were two beams, seven inches wide ; the height of the water, however, precluded further examination.

The lake occupied a hollow among low hills, the only outlet being at the village of Ballinlough, where there is an artificial cut through a bank of coarse boulder clay. If this cut were filled up, the water would rise at least four feet higher than at present ; and it would seem to have been at that level not long since, for all round the beach, to over that height, there is a deposit of shell marl and peat. In the bank of drift on the west of the village is the trace of an ancient ravine, *artificially filled up* with stuff taken

from an oblong excavation (marked *a* on fig. 217). To account for this artificial filling, it may be suggested that the inhabitants of the crannogs were flooded out by an enemy, who stopped the egress of the lake, thus raising the water until the islands were swamped; after this they remained submerged until the opening of the present cut. In later years they had been occasionally occupied for purposes of illicit distillation.*

Lough Naneevin is situated in the townland of Gortacarnam, barony of Moycullen. In the summer of 1865, G. H. Kinahan observed, in this lake, a crannog which is described as oval in form, about one hundred and fifty feet in length, seventy-five feet wide, and on the south a narrow causeway, then partly submerged, had joined it to the mainland. The island bore traces of having (since last inhabited) been covered with water *at least* two feet higher, for shell marl was deposited on the portion below that level. On the south shore of the crannog there was a row of round oak piles, four inches in diameter, and on the S.W. shore were two rows of similar piles, five feet apart; alongside them were oak beams, and there was a double row of piles, seemingly part of a wall, bearing north and south. No piles were observable on the east of the crannog, but there was an irregularly-laid flooring of beams of ash, oak, and willow; from these latter, it was supposed, had sprouted the willow trees, which at that time formed a fringe round the island. The piles had been pointed with a sharp-cutting instrument; therefore metal had been in use either when the crannog was constructed, or repaired.

Six small excavations made near the centre of the island, where the surface of the crannog was three feet above the water-level, disclosed the following section:—

	ft.	in.
Bog, with a few bones, sticks, and stones,	3	6
A bed of regularly laid fern-stalks and leaves (<i>Pteris aquilina</i> , or brake fern), on a flooring of wicker-work, made of hazel rods, about an inch in diameter; over the ferns were a few bones and a quantity of nut-shells,	0	6
Bog-stuff, mixed with branches, and containing a few stones and logs of timber, (over)	5	0

* *Proceedings, R.I.A.*, vol. ix., pp. 172-176.—G. H. Kinahan.

About a foot below the water-level were traces of what G. H. Kinahan considered to be a basket-flooring; and a large flagstone, used as a hearth, was found resting on an accumulation of wood-ashes, three feet in depth. Some distance to the west was a long rude bench (or perhaps the foundation of a wall) formed of stones. The height of the water prevented excavations outside the crannog, therefore few bones were met with, but a little east of the fireplace was the probable site of the kitchen midden.*

Loughrea is situated in the barony of same name. In the locality there lingered a tradition that a city lay buried under this lake, and indeed on a clear calm day—where the waters are shallow—there may be observed various heaps of stones, placed with a degree of regularity that renders it probable they may be remains of ancient lake dwellings. Upon examination it was ascertained that four of the islands in the lough were undoubted crannogs, and it was quite possible that another (known as Blake island) might prove to be also of artificial formation.

Reed Island, situated at the N.W. corner of the lake, about fifty yards from the shore, lies too low to be observable in any picture. Excavations showed (section, fig. 219)—(6) marl; (5) peat; (4) large stones; (3) a layer of birch trunks and branches;

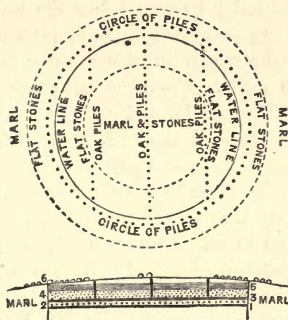


Fig. 219.—Plan and Section of Reed Island. Scale, 20 feet to 1 inch.

* The "finds" here were unimportant, they consisted of a polishing-stone; a dart or arrow-head formed of the carboniferous sandstone of the district; a few sea-shells; some charred bones, principally those of the cow, sheep, pig, and goose—the latter very numerous; hazel nutshells; pieces of chert, off some of which chips seemed to have been struck; small round pebbles of white quartz.—*Proceedings R. I. A.*, vol. x., pp. 31, 33.—G. H. Kinahan.

(2 and 1) two layers of squared oak beams, laid at right angles to each other. The island was surrounded with a circle of piles (fig. 219)—two feet apart—that were seemingly strengthened against wave action by a layer of flat stones, deposited with great regularity; three sets of piles crossed the crannog, which rose about six inches above the ordinary level of the lake, and the lowest beams (1 in section) were four feet two inches beneath the then water surface. The island originally consisted of a wooden platform, enclosed by “a circular wall, the framework of which was the piles, the interstices being filled with sods. As the lake rose, it was found necessary to raise the floor, first by a mass of birch timbers and branches, and afterwards by a layer of stones.”*

Shore Island, situated immediately below Lord Dunlo’s house, and a quarter of a mile from Reed Island, appears to have been formerly connected with the mainland by a causeway formed of marl and peat; but in comparatively recent times the waters of the lake have worn a gap through it, about fifteen yards in breadth. (Plate XLIX., figs. 220 to 223.) The S.S.E. and E. shores were found to be a mass of stone, between and outside two semicircles of oak piles, whilst the W. and N. were banked up with shell marl. Twenty yards south of the island, three circles of piles, three feet apart, could on a calm day be seen below the water. Thirty-five feet from the E. shore part of a circle of piles was visible under the water, being perhaps portion of the circle found in the most northern excavation made. From the east shore a double row of piles extended from the circle, and on the north of these were horizontal beams in parallel line. A little N.W. of the double row, in an old working, there was part of a circle of piles, and in another a row of piles running nearly E. and W. Some of the upright piles formerly bore marks showing that horizontal beams had been mortised on them. This settlement was thoroughly explored, and in it basket-flooring and partitions were noticed (*ante*, p. 32). In 1848, among the numerous bones raised from this site were perfect crania of oxen, sheep, goats, deer, pigs, and what

* The “finds” on Reed Island were, a whetstone, and fragments of another; a slab of sandstone (probably the hearth); a piece of iron, seemingly portion of some cutting instrument; a quantity of wood-ashes; a circular wooden *noggin*, with a small round handle; the handle of another vessel; some bright-red colouring matter, rolled up in a piece of birch bark. Near the outside piles were bones of the ox, sheep, and pig, all very much broken and gnawed.

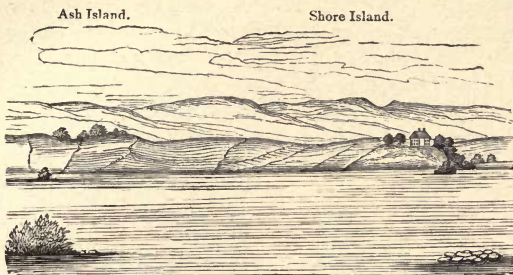


Fig. 220.—View of Loughrea, showing Shore and Ash Island.

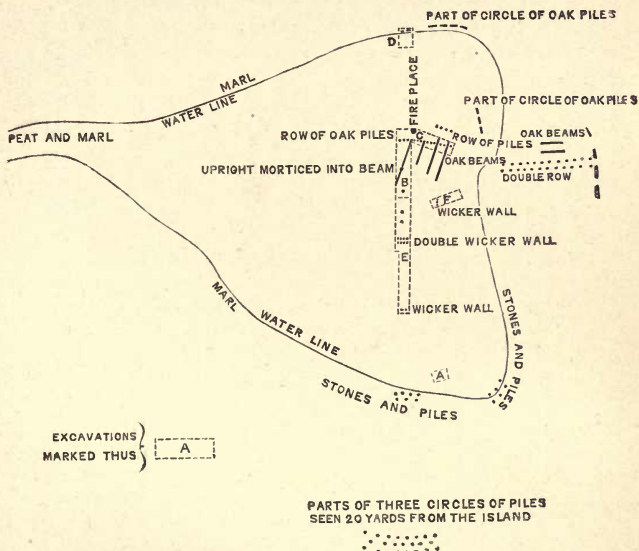


Fig. 221.—Plan of Shore Island. Scale, 80 feet to 1 inch.

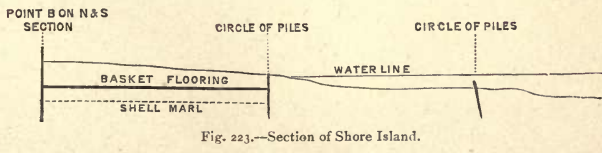


Fig. 223.—Section of Shore Island.

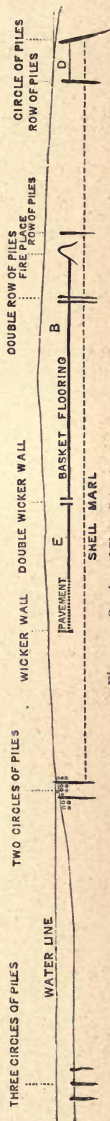


Fig. 222.—Section of Shore Island.

seemed to be those of large dogs, or wolves, together with the head of a *Megaceros hibernicus*, measuring over thirteen feet from tip to tip of the antlers.*

Ash Island (figs. 220 and 224) is sixty yards from the shore at the

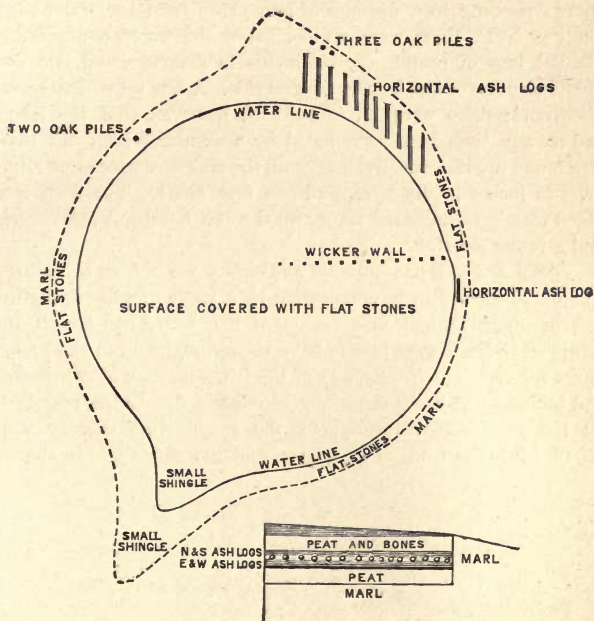


Fig. 224.—Plan of Ash Island. Scale 20 feet to 1 inch.

south-west corner of the lake. When examined, the surface above

* Other "finds" on Shore Island were, numerous flat stones, bearing marks of fire—evidently ancient hearths; fragments of upper and lower stones of a two-handed quern; a small arrow-head (chert); a small celt; eighteen hones of various sizes; a rubbing-stone; several sling-stones; two pieces of Silurian grit (artificially worked); a large Silurian nodule; part of a clay crucible; a bronze pin with a swivel head; a crozier of bronze inlaid with silver; iron shears, like sheep-shears of the present day, but some of them small and fine; a battle-axe, hatchet-edged on the one side, and spiked on the other; a vessel of hammered iron, that had been used for smelting purposes; a knife set in a rude bone handle; a semicircular knife; a piercer of bone; a cut piece of deer's horn; a bone handle of an iron instrument; part of a deer's horn; many heaps of ashes, and hazel nuts.

water measured twenty yards in diameter, and it was covered with flat stones, which continued for a short distance under the water. Towards the S. W. a spur, covered with small shingle, extended outwards about three yards, and to the N. and S. W. were similar spurs stretching to a distance of four yards from the water edge. On the N. E. there were visible, below the water, a number of parallel logs of round ash, six inches in diameter, and two feet apart; also one or two logs on the east side. A few piles of oak were discovered; there were no indications, however, that the island had at any time been surrounded by a regular piling, but there was found a wicker, or dividing wall, the stakes composed of round fir, two inches in diameter, and one foot apart. The finds consisted merely of fractured bones, wood ashes, hazel-nuts, two hones, and a round sea-stone.

Island M'Coo is one hundred and eighty yards from the nearest shore. It seemed to be surrounded by a circle of piles thirty-five feet in diameter, and in a season of low water *gun-barrels* and *bronze spear-heads* were said to have been brought up in the prongs of eel-spears. The incongruity of the juxta-position of gun-barrels and bronze spear-heads can easily be explained. In the year 1798 all the guns seized throughout the surrounding country were brought into the town of Loughrea, and the magistrate in charge,

Island M'Coo.



Fig. 225.—View of Loughrea, Island M'Coo in the distance.

having orders to destroy them, caused them to be carried out and sunk in the lake. At the east side of the island were observed traces of four canoes with their prows turned towards the shore. An attempt to raise one of them—a single-piece canoe of oak—failed, it being so decomposed that it broke across in the middle.

The age of these crannogs was estimated to be over 1800 years, or before the Christian era. When they were first constructed the surface of the lake must have been at least seven feet lower, and at a subsequent period the west part of the lake must have been twelve feet deeper. The change in the level of the water was caused by the silting up of its outlet. The ancient stream from the lake seems to have been at the west end of the town of Loughrea, where is an alluvial deposit; whilst at its modern outlet there is strong corn gravel, and a little below its present bed there seems to be rock. The town is more than four hundred years old, and since that date the water could scarcely have changed its level, because the eastern outlet of the lake ran at the foot of the town wall; and thus forming part of the town defences, the inhabitants would have kept the stream free.*

Crannog Mac Navin.—*Ante*, pp. 149–50.

Ballinafad.—*Ante*, p. 24.

Ballinahinch.—*Ante*, p. 34.

Caislen-na-Caillighe.—*Ante*, pp. 33–4.

Goromna Island.—*Ante*, p. 33.

Lough Bola.—*Ante*, p. 34.

Lough Cam.—*Ante*, p. 34.

Lough Hackett, formerly *Lough Cimbe* (pronounced Kimmay), *ante*, p. 157.—An allusion that, in all probability, refers to a siege of this crannog, occurs in the *Annals* of Lough Cé, under date A.D. 1067, where it is stated that Torlogh O'Brien led “a hosting to Loch-Cime.”

* *Proceedings R. I. A.*, vol. viii., pp. 412–427.—G. H. Kinahan.

COUNTY MAYO.

Loughannaderriga.—There are, doubtless, many persons who, if asked to point out the exact position of Achill, would be unable to do so, yet it contains an area of about thirty-six thousand acres, and a population which may be reckoned by thousands. Here, two miles from the village of Doogort, is an “imperium in imperio,” an island within an island, and this is believed to be, at present, the only authenticated crannog in Mayo, to which county Achill Island belongs. *Loughannaderriga* (*the lakelet of the oaks*) is



Fig. 226.—General view of the Crannog of Loughannaderriga, Achill Island.

about two hundred yards in diameter, and in shape somewhat inclined to an oval; it is environed by abrupt banks of peat, which, in recent years, have considerably encroached on the water-area. The bottom consists of deep, treacherous mud, so that an exploration could only be attempted by aid of planks, and even then a cursory examination was alone found practicable, the water not having been withdrawn by drainage.

Of the crannog, the diameter is about sixty feet; its exterior face so worn away by wave action, that the traces of the outer row of piling are now some feet distant. The Irish-speaking natives still call it the *Crannog*, and in English designate it "the island"; its surface is covered with a luxuriant growth of bilberry and *Osmunda regalis*. An excavation showed—

1. A natural growth of peat, about three and a-half feet thick.
2. A layer of branches.
3. Small stones.

Some feet from the exterior face of the crannog, on the side shown in fig. 226, numerous pointed ends of stakes, evidently dressed with a sharp metallic tool, were extracted from the mud

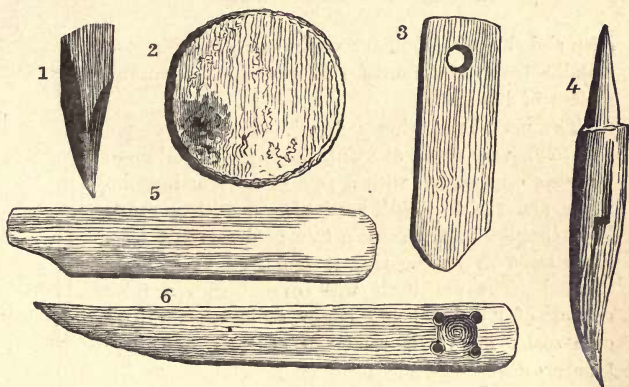


Fig. 227.—Miscellaneous wooden Objects. 2, 3, 5 one-eighth real size; 6 one-fourteenth real size; 1, 4 one-sixteenth real size.

(fig. 227, No. 1), and a large portion of another (No. 4) lay on the beach. A fragment of a beam, mortised at one extremity, was found in close proximity (No. 6); its quadrangular incision, which did not quite penetrate the plank, was saucer-shaped at bottom, and an unique arrangement of a peg-hole in each corner shows the firm manner in which it had been originally secured: it probably belonged to the framework of the crannog hut. Not far from this was part of the blade of a canoe paddle (No. 5),

the bottom of a wooden vessel, one side bearing traces of fire (No. 2), and a stave (most likely of the same utensil), pierced for reception of the handle (No. 3). There were also several non-descript portions of worked timber, numerous chips, pieces of charred wood, and a couple of white sling-stones, consisting of water-worn sea-beach pebbles. Deeply imbedded in the mud was a large whetstone (fig. 228), much worn on three sides by the friction of whetting, and bearing



Fig. 228.—Whetstone. One-ninth real size.

deep and sharp indentations produced by the edges of metallic tools; the fourth side presents the natural surface of the stone.

The most interesting "find" was a bronze pin (fig. 229), very sharp at point, the superior portion of the acus ornamented with a row of circular indentations, and the flattened head pierced with a round hole, through which passed a thin golden-bronze loop, of material so fragile that it crumbled away when touched. The pin itself was covered with a thick coating of "patina" and boggy sediment, which at once scaled off; it is composed of early and pure bronze called "golden," from its resemblance to the precious metal, and it is of the type of those found in the ancient *Emania* destroyed in the third century. There were no traces of either bones or pottery; as the probable level, on which they might be expected to rest, was not reached.



Fig. 229.
Golden-bronze
Pin. Full size.

COUNTY ROSCOMMON.

Twelve crannogs were discovered in this county during the working of the Commission for the Arterial Drainage of Ireland: these sites have all been identified.

Loughlea.—A flint mass, a piece of a circular grindstone, a fragment of a bone spike, two portions of the blades of iron swords, and an antique-shaped iron key, were here brought to light. There were three crannog sites in this lake.*

Muckenagh.—*Ante*, p. 154.

Derreen Lake.—There were here found an iron hatchet and a pair of stirrup irons.†

Kilglass.‡—Of this site the name alone is given.

Cloonfree, Cloonfinlough.—In the year 1852, by the operation of drainagè works in the vicinity of Strokestown, the level of the three lakes of Cloonfree,§ Cloonfinlough, and Ardakillen was greatly lowered, and one artificial islet in the first-named sheet of water, and two in Cloonfinlough were laid bare. Of the latter, one island was one hundred and thirty feet in diameter, constructed on oak piles driven into the soft marl at regular distances, bound together by horizontal oak stretchers forming a triple stockade, with an interval of five feet between each. To the N.W. were a number of irregularly-placed piles, stretching a short distance from the islet. The centre of the stockades was laid with trunks of small oak-trees, placed flat on the marl; they all pointed to a common centre, thus forming a platform whereon the island itself was constructed. When first observed, there was jutting out from the island, towards the west, a kind of jetty or pier, formed of a double row of piles and stretchers running parallel, and about eight feet asunder, on which logs of timber were laid closely and horizontally.

* *Cat. Mus. R.I.A.*, p. 29. *Proceedings R.I.A.*, vol. v., Appendix lxi.

† *Proceedings R.I.A.*, vol. v., Appendix lxii.

‡ *Ibid.*

§ No special description of the Cloonfree crannogs (2) has been furnished; but the following antiquities, found in or around them, were presented to the Museum R.I.A.:—A small bone spear-head, four inches long; a rude pin, formed apparently of the long bone of a fowl; a boar's tusk; bronze tweezers; a pin, with ornamental head, carved on two sides; a long pin, with ornamental spike-head; a ring; a (?) buckle; an iron horse-shoe; a fragment, like part of the hilt of a sword; a spike, for butt-end of spear; a pair of tweezers; a small pin, the head bound with bronze wire; two amber beads, one of them flat in shape.—*Proceedings R.I.A.*, vol. v., p. 219.

In a short time very little of either the gangway or stockades remained, so much had been broken up and removed by the peasantry. A trench—twenty feet long by five wide—having been cut as near the centre of the island as possible, there was found, at about eight inches under the surface, a very closely-laid pavement of irregular-sized boulder stones; then a stratum of black earth, with occasional fragments of bones through it, became exposed, and about six inches beneath this was a considerable layer of burnt earth, with several inches of unburnt clay under it. It is evident that the height of the island had been raised and a new surface pavement laid, for then came a second very closely-laid floor of large-sized, flat-surfaced stones, beneath which were alternate layers of black earth, burnt clay, and marl, reaching down to the log flooring, and interspersed, like the one above it, with occasional bones and fragments of bones. A human skull, and portions of others, were got on the exterior edge. Between the island and the ruined church were found two single-piece oak canoes, little more than two feet wide, the stern of one being perforated with numerous auger holes about an inch in diameter.*

Close to the island were numerous articles of a miscellaneous description, some of great antiquity, others of more modern date; also a deposit of bones of *Bos longifrons*, *Cercus elaphus*, *Equus caballus*, *Sus scrofa*, *Capra hircus*, fallow deer, sheep, fowl, dogs, &c. One or two osseous fragments, said to be human, were found in the lowest stratum, together with splintered bones and horns of the *Megaceros hibernicus*. Traces of this great "Bighorn" have (as already noticed) been found also in the crannog of Breagho, in the lacustrine settlement in Loughrea, and in Ballinlough, *i.e.* in connection with four crannog sites, whilst the exploration of the cave of Ballynamindra,† situated near Cappagh, county Waterford, has proved the contemporaneity of man with the *Megaceros*. In that cave, and lying but a little over the stratum which contained the bones of the *Megaceros*, was found the bone handle of what, judging from its ferruginous colour, appeared to have been an iron blade.‡

* *Proceedings R.I.A.*, vol. v., p. 208, &c.—Appendix, D. H. Kelly.

† *Scientific Transactions of the Royal Dublin Society*, vol. i., series ii., p. 222.

‡ In the crannogs of Cloonfinlough (2) there were found several bronze spear-heads; pins of great variety of form; a bowl hammered out of the solid (*ante*, p. 84); a fragment of another (*ante*, plate xvii., No. 3); two vessels composed of small pieces

Amongst the bronze relics, not the least remarkable was a lamp, of which the accompanying illustration affords a correct idea. It measures in extreme length four inches and five-eighths. The bottom was perforated, evidently for the admission of a support or stand, up or down which the lamp could have been slid to suit the convenience of anyone using it. Lamps fashioned in this way are still in common use in Italy. The aperture to admit a stand has been covered by a small plate of iron about the thickness of a shilling. A similar lamp in the collection of Celtic antiquities formed by the late Dean Dawson, as well as the Cloonfinlough



Fig. 230.
Bronze Lamp, from Cloonfinlough.

curiously rivetted together; a brooch of handsome workmanship (*ante*, p. 117); numerous bone pins and implements; combs of great artistic merit (*ante*, p. 113); discs and deer's horns; knives, sickles, hatchets, swords, and spear-heads of iron; an implement made of sheet iron rivetted together, having in the centre a circular ornament with a cross, that evidently once had borne an arabesque pattern; many diminutive frying-pans; small whetstones; single and double bronze rings; a coin of the Emperor Hadrian; a Bulla of Pope Paul V.; several silver coins of the Edwards—one so late as James II.; also a silver coin, unfigured, it is stated, in any collection. From the same locality the following articles, purchased from Mrs. E. Devenish, Clonfinla House, Strokestown, are now in the British Museum:—A bronze dagger and brooch (*ante*, plate xxxv., Nos. 1 and 2); a plain brooch pin, $5\frac{3}{4}$ inches in length; fourteen bronze pins of varying size and shape; a cruciform object for attachment, diameter, $1\frac{1}{8}$ inches; a harp pin, quatre-foil at one end, round at the other, which is pierced with a hole for the string, length, $2\frac{3}{4}$ inches; an iron bill-hook, penannular socket, one rivet-hole; a double axe (plate xxxv., No. 6); a spear-head much corroded, no rivet-hole, length, $7\frac{5}{8}$ inches; an arrow-head (plate xxxv., No. 4); a knife with long handle, all of iron, length, $7\frac{1}{4}$ inches; a gouge and chisel combined, length, 9 inches; a gouge, $7\frac{1}{8}$ inches; a pair of shears, length, $7\frac{1}{4}$ inches; a piece of iron with remains of loop handle, length, $4\frac{1}{2}$ inches; a circular pan with straight handles, remains of a loop at the end, length, 7 inches; diameter, $3\frac{1}{2}$ inches; a key, openwork handle, length, $2\frac{1}{8}$ inches; a stone chessman (*ante*, p. 132); a sharpener, grey in colour, square in section, decreasing to each end, length, $4\frac{3}{4}$ inches; a flat bead of dark-grey shale, diameter, $\frac{1}{2}$ inch; a bone scoop resembling No. 8, on plate vi., and having two rivet-holes at butt, ornamented with group of four dots, length, $5\frac{7}{8}$ inches; a curved pin of bone, with flattened head, length, $4\frac{3}{4}$ inches; a second pin about half that size; two needles of bone, varying in length from $3\frac{5}{8}$ to $2\frac{7}{8}$ inches; a ring of stag's horn (plate xxxv., No. 5); draughtsmen of stag's horn (p. 131, figs. 176, 177); a wooden peg, roughly cut, length, $2\frac{1}{2}$ inches; a bucket stave, with marks of two bands on outside surface, and furrow for bottom on inside, length, $7\frac{5}{8}$ inches; a single-piece leather shoe (plate xxxv., No. 7); a silver Scottish 20 shilling piece, *obv.*, *crowned head of king*, to left in field xx—legend, CAR·D·G·MAG·BR·FR·ET·HIB·REX.—*R. crowned thistle*—legend, IVST·THRONVM·FIRMAT.

specimen, are now in the Museum of the Royal Irish Academy. The design is graceful and classic, so much so, indeed, as to suggest the idea that the little object may have formed portion of a spoil taken from Britain at a time while yet Roman influence there prevailed. Raids by the Irish on the coasts of Britain were very frequent, from whence they generally returned laden with spoil: this may account for traces of Roman civilization discovered in Ireland, for hoards of Roman coin have been unearthed in various localities.

Ardakillen.—In this lake one of the four crannogs discovered was constructed of both stones and oak piling. Fig. 231 represents a section of this island. The upper line (*a*) shows the former high water-level before the drainage operations; (*b*) the ordinary winter flood; and (*c*) the average summer level.

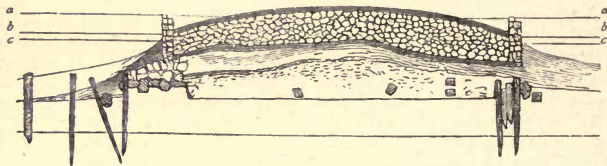


Fig. 231.—Section of one of the Ardakillen Crannogs.

Under a slight earthy deposit there was a deep layer of loose stones, bounded by an enclosing wall, the foundation supported by piling. The lower portion of the island consisted of clay, peat, and stones, mingled with strata of ashes, bones, and logs of timber. The various rows of oak-piling are shown in the section; the sheet-piling, driven in obliquely, formed an unbroken circle round the island. When the level of the lake was lowered, four islands became visible, and on the largest upwards of fifty tons of bones were found: this is probably the crannog mentioned in the *Irish Annals*, under dates 1368 and 1388 (*ante*, p. 154). The scene which this site presented shortly after the lowering of the water-level was very remarkable; scores of persons visited it, at first in search of bones, for which they found a ready sale as manure, and afterwards with the view of picking up antiques, with which the bog-matter around the sheet-piling or stockade was plentifully studded. Large numbers of these were disposed of to an English collector, and amongst the objects known to have been obtained by him was a beautifully-formed vessel of wood, bound round with

plates of thin golden bronze, upon which a variety of designs were displayed.* What appears to have been a very similar article was found many years ago in deepening the bed of the Kinnegad river, and is figured (p. 67) in Wilde's *Boyne and Blackwater*. A "dug out," eighteen feet in length, discovered lying on the bottom of the lake, was wantonly destroyed, and ultimately utilised for firewood. Near the crannog was a canoe, forty

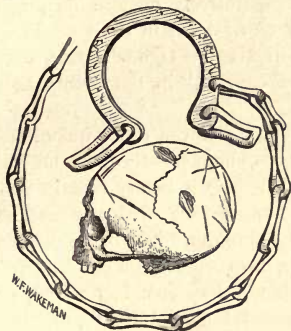


Fig. 232.
Skull and Iron Fetters from the Crannog of
Ardakillen. One-eighth real size.

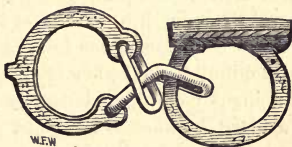


Fig. 233.
Iron Fetters from one of the Strokestown
Crannogs. One-third real size.

feet in length, and four feet across the bow; it was hollowed out of a single trunk of oak, and in it were a skull, a spear-head, and a bronze pin. The skull bears the mark of no less than twenty sword-cuts, showing the murderous conflict in which its owner must have been engaged. Near it was found a neck-piece of iron with twenty feet of rude chain attached† (fig. 232). Another set of "irons" (fig. 233) came from a crannog in the

* The following "finds" from Ardakillen are deposited in the Museum, R. I. A. :— Numerous bone pins of various sizes and designs; twenty-two combs or fragments of same; a bone dart, six and a-half inches long; do., five and a-half inches long; do., four and three-quarter inches long; do., five inches long; a curved piece of deer's horn, hollowed at the base, and another piece slightly longer; a tine of deer's horn, hollowed at base; numerous harp-pins of bone (one is figured, *ante*, p. 125); a curious ovoid piece of bone, polished (*ante*, p. 105); the leg-bone of a deer, covered with carvings (plate xxxii.); a bronze brooch (*ante*, p. 117); a small slender torque-pattern ring (*ante*, p. 118); a bridle-bit (*ante*, p. 137); several whetstones; a very perfect, thin, narrow rapier-blade, double notches in handle-plate; beads of stone, bone, wood, porcelain, glass, and amber; numerous bronze pins; an oaken water-scoop, with a hollowed-out handle; a wooden mallet; some ogham-inscribed wooden objects.—*Journal Royal Hist. and Arch. Assoc. of Ireland*, vol. iii. (4th Series), p. 206.

† *Proceedings R. I. A.*, vol. v., p. 214. *Cat. Mus.*, R. I. A., p. 219.

immediate neighbourhood, and from the size it is likely they were intended for ankle-fetters; it is stated that similar instruments have elsewhere occurred in Irish lacustrine sites, and, strange to say, in one instance there were traces of gilding. In Irish MSS. allusions frequently occur to the practice of putting captives in fetters; they were sometimes so severely manacled as to produce almost unbearable torture. Prisoners were often slain when fettered. One instance, though a comparatively modern one, will suffice:—According to the *Annals of Loch Cé*, in the year 1585, a son of Teige O'Rorke, and a son of Magnus Oge O'Curriu, were captured, "placed in irons on *Loch-na-cula*," in the county Leitrim, and slain.

The skull found lying in the bottom of the canoe was of the oval or elliptical (*Dolicho cephalic*) type, characteristic of the natives of western or southern Europe. There is a theory that in primeval times in Erin there were two races, each distinctly marked both by features and the form of the cranium. The one possessed thick elliptical skulls, low foreheads, deep orbits, high cheek-bones, prominent mouths, and narrow chins; the other had round, or globular (*Brachy cephalic*) skulls, possessed more intellect, and less marked features. Wilde observes that the two fragments of human skulls discovered in the crannog of Lagore* (*ante*, p. 204) partook of the character of the long-headed race, whilst the antiquities found with them would lead to the belief that the persons to whom the skulls had belonged did not live later than the tenth century. Good examples of both races may still be seen amongst the modern Irish.

"There are reasons for considering that the Ardakillen skull belonged to a young adult, or to a man in the prime of life. This opinion is based upon the fact that the coronal and sagittal sutures were not obliterated. (The coronal suture is the name given to the line of articulation between the frontal and parietal bones; it forms a *vertical transverse* line over the top of the front of the skull. The sagittal, or interparietal suture, occupies a *median longitudinal* position between the two parietal bones.) The coalescence into one plate of bone (calvarium, or skull-cap) of the frontal and the two parietal bones, and the consequent obliteration of the sutures (coronal and sagittal), generally occurs between

* Unfortunately these remains in the Museum, R. I. A., cannot now be identified.

thirty and forty years of age; however, the period at which this union commences, and the order in which it proceeds, is subject to so much variation, that no more than an approximation to the age of the skull is attainable thereby.

“Examination of the teeth remaining in one side of the upper jaw—the opposite side of the jaw was broken away—showed that the third molar tooth (*dens sapientiæ*) had been erupted.

“The many marks of cutting instruments upon the skull were found chiefly over the vertex and the frontal and occipital regions. In many the force had been applied at right angles to the cranium, resulting in nicks or linear marks; in several horizontally, so as to slice or shave off a portion of the outer table of the bone. In no case was there a perforation of the inner table apparent, nor a fracture or fissure of the entire thickness of the skull, whence it might be inferred that the weapons were not of any great weight; the force of the blows might have been broken by protecting head-gear, thick coils of matted hair, or by defensive movements of the arms. There were no appearances to negative the idea that all, or the majority of, the cuts were received about the same date. They have all the characters of *ante mortem* injuries, as contrasted with such injuries as the skull is liable to from rough usage, or from its being knocked about. From the distribution of the marks it may be assumed that the man was in an upright or semi-upright position. In the hacking of a dead and prostrate enemy the wounds would be on the part of the head which was uppermost.

“Though there is no single wound which must have proved fatal *ex necessitate rei*, death might have ensued from the accumulation of injuries, from concussion, erysipelas, or secondary inflammation of the brain or its membranes.”*

* The report on the skull has been most kindly furnished by A. W. Foot, M.D., Member, Royal Hist. and Arch. Association of Ireland.

COUNTY LEITRIM.

Twenty crannogs were discovered in this county during the working of the Commission for the arterial drainage of Ireland: these sites have all been identified.

Drumaleague may be cited as a good example of a lacustrine dwelling: the form circular, and, with the exception of the hearth-stones, it was composed wholly of wood, principally alder. Drumaleague lake, situated in the vicinity of Lough Scur, was originally about a mile in length. The level of the water having been lowered thirteen feet, two crannogs became visible, as also a canoe—hollowed out of a single trunk of oak—eighteen feet long, twenty-two inches broad, square at stem and stern, and having apertures or rowlocks cut in the sides.

The annexed plan of one of the islands conveys a good idea of the general arrangement of this class of structure. The outer

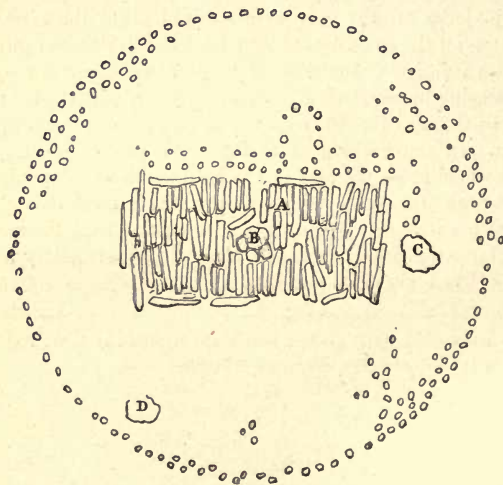


Fig. 234.—Plan of Crannog in Drumaleague Lake. Scale, twenty feet to one inch.

line of stakes enclosed a circle sixty feet in diameter, and within the enclosure there were groups of stakes—in some parts two or

three deep—driven into the ground, seemingly for purposes connected with some internal arrangement. A, the central oblong portion, consists of a platform of round logs cut in lengths of from four to six feet, possibly the floor of the hut; B, a collection of stones with marks of fire on them; C, a heap of stiff clay; D, the root of a large tree nearly buried in the peat, the surface of the wood bevelled off, so as to form a sort of table, under which was found a considerable quantity of bones, apparently those of deer and swine.

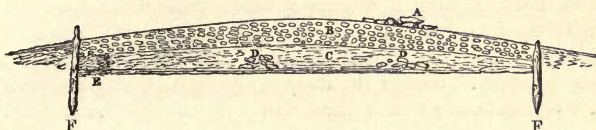


Fig. 235.—Section of second Crannog in Drumaleague Lake.

Fig. 235 is a section of the second crannog, which was surrounded by a tolerably regular circular enclosure formed of a single row of oak stakes F, F; it was seventy-two feet in diameter. The upper stratum B, consisted of horizontal logs of alder, reposing upon a black peaty surface; the logs were from three to eight inches in diameter, completely water soaked and rotten: this stratum of timber was three feet six inches deep. A, a heap of stones with marks of fire on them. Other hearths were found in different parts of the island. C, the lower stratum of decayed and blackened sticks and branches of all descriptions lying in every direction: this layer extended as far as it was pierced in the examination, viz., about four feet, but was evidently of greater depth. D, D, two heaps of stones found in the lower stratum. E, the kitchen midden, in which was a large quantity of bones of deer, swine, oxen, &c., that lay four feet below the surface. There was here found also the thin topstone of a quern, formed of micaceous quartzite, smooth upon the grinding surface, but otherwise rude and unfinished: the hole for the handle passes quite through; the grain-hole, two and a-half inches in diameter, is not directly in the centre.*

Lough Scur.—This crannog is alluded to in the *Annals of Loch Cé*, under the following dates:—1345, four sons of *Cathal*

* *Cat. Mus., R.I.A.*, p. 110.

Mac-in-caich Mac Raghnaill were taken prisoners on *Loch-an-Scuir*, and put to death; 1390, O'Rorke, who had been in confinement, escaped to the castle of *Loch-an-Scuir*, but was overtaken and slain "when coming out of his cott"; 1580, *Loch-an-Scuir* was taken, and *Maelsechlainn Mac Raghnaill* slain. On this site was found the largest quern in the Museum, R.I.A., the nether-stone being twenty and three-quarter inches long by three and three-quarter inches thick; the aperture for the pivot one and three-quarter inches deep, the same across; it is surrounded by a raised lip to retain in position the upper stone, which is nineteen and a-half inches in diameter by two and three-quarter inches in thickness: the grain aperture is three and a-half inches wide; upon the upper surface is the mark of the cross-bar of the pivot, its upper surface left in a rude state; it has one handle-hole. The stone mould, figured *ante*, p. 72, was found here, and a model of a portion of the oak framework of the crannog—one-quarter real size—was deposited in the Museum, R.I.A.

Lough Rinn (the lake of the promontory) lies in the barony of Mohill. It is mentioned in the *Annals of Loch Cé*, under date 1345, when O'Conor, "king" of Connaught, was killed by an arrow at *Loch Airinn* whilst assisting *Mac Raghnaill*, to whom the crannog on the lake belonged; for the sept of the Mac Rannals formerly possessed the neighbouring district, then called *Conmaicue Moyrein*. In the year 1847, the waters of Lough Rinn having been lowered, two canoes were found imbedded in the mud near an old castle at the promontory from whence the locality derives its name; there was also a chain, or manacle, composed of iron rods, looped at their ends, like one found in the Strokestown crannogs. One of these canoes was a "single-piece," hollowed out of oak, and flat-bottomed, the length thirteen feet and the breadth nearly two feet throughout; the sides were only four inches high; but the original depth must have been greater. In front of the old castle stands an island covered with self-sown ash and thorn, and constructed with wooden piles, of slight scantling, but perfectly sound; "the paling was interlaced and pegged down in a very rude manner: the island appeared to have been formed inside of it, and raised upon a similar description of work." A small bronze arrow and a spear-head were found two feet deep in a gravel shoal close to Rinn Castle, between Loughs Rinn and Sallagh.

St. John's Lough contained four crannogs, in which three silver coins of Edward I., II., and III. were found.

Loughtown crannog measured one hundred and twenty feet from east to west by one hundred feet from north to south, and was surrounded by a mass of stakes upwards of fifteen feet wide, inclining in towards the centre of the island.

Aghakilconnel Lough.—Three iron pots, one of them triangular in form, were found on this site.

Lough MacHugh contained two crannogs; one measured seventy-four feet by one hundred and eighteen feet.

Cloonbo and *Cloonturk Loughs* had each two sites.

Cloonfinnan, *Cloonboniagh*, *Castlefore*, and *Funshinagh Loughs*, each contained a crannog.

Crannog Island.—No account is given of this site.

Manorhamilton.—A crannog, a canoe paddle, and other articles were discovered not far from this village.*

Muintir Eolius.—A crannog in this district is mentioned in the *Irish Annals* (*ante*, p. 152).

COUNTY SLIGO.

Glencar lake, situated between the counties of Sligo and Leitrim, is embosomed in mountains; to the north lies the Ben-Bulben range, and to the south the Castlegal range with bold precipitous sides, its grey limestone cliffs resembling ancient weather-beaten fortifications, and its slopes in parts clothed with plantations of fir. The rain that falls on the summits of the Ben-Bulben range descends to the vale in numerous streamlets, which, after a continuance of wet weather, appear when viewed from a distance like streaks of silver. Some form waterfalls of more or less magnitude, of which one is called in Irish *Sruth-an-ail-an-ard*, or the stream against the height; because in this instance, when the wind blows from a certain point, the ordinary laws of hydrology seem to be reversed, and the water, instead of falling, is either driven upwards and back against the mountain, or it is blown outwards

* *Proceedings, R.I.A.*, vol. v., Appendix, lix. *Cat. Mus., R.I.A.*, p. 552.

in a sheet of spray, like a pennant. Ben-Bulben, or Ben-Gulban, *Gulban's Peak*, is said to be so named from Gulban, son of Nial of the Nine Hostages, who was fostered near it. Gulban was ancestor of the O'Donnells, who, through this mountain gorge, frequently poured their forces into Sligo. In the year 1595 O'Donnell, when pursued by Bingham, retired to this valley, in full confidence that the wary Saxon would not attempt to follow him through the narrow and difficult defile, and in 1597, the same chief encamped in the immediate vicinity of the eastern crannog. So late as 1609, in a curious old map of the county, the valley of Glencar and the slopes of Ben-Bulben are delineated as covered with wood, and the following quaintly-worded information is appended:—"Ye high hills of Ben-Bulben, where yearly timbereth a falcon esteemed the hardiest in Ireland." The locality is still the *habitat* of the peregrine falcon.

Although, in the present day, lovers of the picturesque resort to Glencar, yet, probably, few are aware that the locality was anciently the home of a considerable lacustrine population. In the early part of this century, when the level of the lake had been lowered by drainage operations, several crannogs became visible; and the one situated at the eastern extremity, where the stream enters the lake, had seemingly been the largest. Broken bones, antlers of deer, a quantity of old timber, and some articles of bronze (amongst them a tweezers) were said to have been obtained. In the *Annals of the Four Masters*, under date 1541, this site is noticed as the scene of strife between two branches of the O'Rourkes.—"The eastern crannog, on the lake of *Glen Dallain*,* was taken by the sons of Donal, son of Donogh O'Rourke, from Donogh, the son of Donogh O'Rourke. In some time after, the sons of Donogh O'Rourke, namely, Donal and Ferganainm, made an attack on the crannog, and privately set fire to the fortress; that act was perceived and detected, and they were pursued on the lake and were overtaken by the sons of Donal; Ferganainm, the son of Donogh, was slain, and drowned by them; and Donal having been taken prisoner, was hanged by the sons of Donal, the son of Donogh O'Rourke." At the western end of the lake—on

* Another name for Glencar lake. This crannog lies within the bounds of the Co. Leitrim. The more ancient name of Glencar, as used by the *Four Masters*, was *Cairthe Mulchean*, i.e. Mulchan's Pillar-stone. *Gleann-a-Chairthe*, pronounced Glencarna, and *Glen Dallain*, signify the Glen of the Pillar-stone.

the subsidence of the water after drainage—four crannogs became visible; but, owing to the subsequent silting up of the cutting in the bed of the Drumcliff river, they have all again disappeared, with the exception of the largest, which, at the time of the drainage, was accessible from the land dryshod, though now the water reaches to a wader's knees. To the east of this crannog there is still a considerable depth of water: the beach descends rapidly, and layers of large beams, from six to seven inches in diameter, can be seen radiating from a common centre; in some instances, three or even four layers can be traced. Cross-beams are noticeable, also piles driven in at intervals; these are only three or four inches in diameter, and sharply pointed at the ends; this side of the crannog presents the appearance of having been denuded of stones. The height of the water prevents exploration; but it has been roughly computed that, including the wooden substructure now submerged, the diameter had formerly averaged seventy feet, or possibly more. Careful search amongst the stones merely led to the discovery of fractured bones of *Bos longifrons*, *Cervus elaphus*, *Sus scrofa*, &c., and numerous teeth of mammalia, together with a fossil, possibly a selected specimen used as an ornament or charm, and pronounced to be a *Zaphrentis*—a coral of the carboniferous formation.

“ . . . in that rock are shapes of shells and forms
Of creatures in old worlds, of nameless worms
Whose generations lived and died ere man,
A worm of other class, to crawl began.”

Opposite the crannog, the beach on the mainland is strewn with fractured bones similar to those on the island. The antlers of a *Cervus elaphus* were found close to the shore, and a wooden peg (*ante*, p. 104, fig. 108) was seen lying on the bottom near a beam. In one of the mythical legends of the “Pursuit of Diarmuid and Grainne,” mention is made of the Glencar lake-dwellings as one of their places of refuge.

Lough Arrow.—Not far from the old Abbey of Ballindoon is an artificial island formed almost entirely of stones; the earth—in which a few young firs are now growing—was brought to it by the late proprietor, J. Gethin. This crannog, the largest of a group, still stands well above the surface of the lake. To the north—but separated from it by a deep and narrow channel—is a shoal called “Sunken Island,” which is in summer weather almost dry, and

around both these sites were numerous fractured bones of the *Bos longifrons*, *Cervus elaphus*, and *Sus scrofa*. Still further to the north, and close to the shore of Ballindoon demesne, is plainly discernible the summit of a large pile of stones, evidently deposited by human agency, but the depth of water effectually precluded any hope of obtaining handicraft "finds." The island at *Annaghcloy Point* is said to be artificial, and around *Oilean-naprechaun* (*Crow Island*)—seemingly formed of small stones, and situated near the exit of the river Unshin from Lough Arrow, at Bellarush bridge—were found lying on the beach numerous fractured bones of the usual crannog type.

Lochanacrannog is the name of a small townland in the barony of Tireragh, near the residence of Sir Malby Crofton, Bart. The small pond in which the crannog is situated becomes almost dry in summer, yet, despite this favourable circumstance, no relics have



Fig. 236.—General view of Lochanacrannog.

been discovered. A trench cut through the island showed that it was composed of clay mingled with some few stones, and these, around the exterior edge, were arranged in a systematic manner.

Ballygawley.—This lake, picturesquely situated at the foot of the Slieve Dæane range of mountains, is embosomed in wood,

which may be viewed as now representing the primeval mantle that had formerly covered the neighbouring slopes, when

“The wolf, the wild-cat, and the bear,
Prowled in these woods, or made their lair.”

The crannog lies about one hundred and eighty yards from the

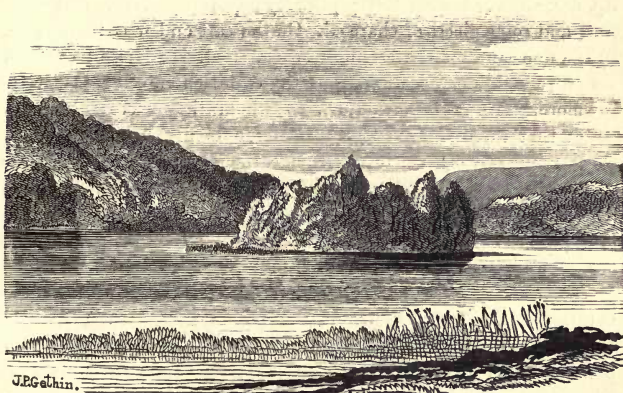


Fig. 237.—General view of Ballygawley Lake and Crannog.

eastern shore, and the diameter of the area covered with stones is eighty-five feet, but the wooden substructure extends to a considerable distance under water. The beams, protruding from under the superincumbent stones, appeared—as is usual—to radiate from a common centre, but two beams on the west shore, and one that was raised from a depth of one foot under the present water surface on the south shore, seemed to lie at a tangent to the circle of the crannog. In fig. 238 the mortises *a*, *b* secured the heads of



Fig. 238.—Beam, or Stretcher, binding tops of Piles, 10 ft. 6 in. long by 9 in. broad.

piles, and *c*, *d* (of larger size) may have held some of the radial beams. The highest point of the crannog now stands about five feet above the level of the lake, which has been reduced three feet

in height, as the result of drainage operations carried out by the proprietor, Colonel Cooper. Some of the encircling piles remain in position; three were noticed on the north, and one on the south-east shore. To the west and south the water is shallow, and this shoal would seem to have been the "kitchen midden," or refuse heap, for numerous teeth of the *Bos longifrons* were here dredged up, and close to the encircling piles lay a quantity of fractured hazel nuts and some pieces of charcoal. On the east and west there were, in the fine sand on the crannog beach, small portions of calcined bones, resembling those found in the cromlech interments at Carrowmore. A. W. Foot, M.D., to whom they were submitted, states that these fragments were "undoubtedly bone, several of them unmistakably calcined (from carbonaceous residue). Some of the fragments are entirely composed of carbonate of lime, others are a mixture of carbonate and phosphate of lime. It could not be determined whether they are animal or human; this should be conjectured from surrounding or collateral circumstances."

Lough Gill is one of the numerous localities in Ireland to which is attached the legend of a buried city. Amongst the peasantry there long lingered a tradition that these waters had overspread a plain whereon stood the ancient town of Sligo, the numerous islands being supposed to represent former knolls on its green expanse. As the result of recent extensive drainage operations in the county Leitrim, a large additional amount of water has, through the river Bonnett, been directed into Lough Gill at its eastern extremity. The consequent greatly increased height of surface would, of itself, present an insuperable bar to exploration, so that no means remain of ascertaining if an extensive lacustrine settlement had ever really existed here of old. Within the actual bounds of the lake, which is seven miles in length, the islands, highly picturesque, and of some extent—one of them contains twenty-five acres—are of undoubted natural formation; there is, however, near the site of the ancient Castle of Annagh—noticed in the *Annals of the Four Masters*, under date 1533—one small islet, bearing a crannog-like appearance, but, as far as can now be ascertained, no traces of occupation have been found around it. The short stretch of the Garvogue, or Sligo river, which forms the outlet from the lake to the sea, seems to present the peculiar features characteristic of sites the most favoured by a lacustrine population, viz., good fishing-ground, and wide borders of marsh on

the adjoining mainland. The ancient name of the demesne of Hazlewood was Annagh (*a swamp*), and a portion of the grounds which skirt the river, and now remarkable for its peculiarly ornamental planting, was so late as sixty years since a mere spongy bog, on which no firm footing was obtainable. The opposite shore, called Cleveragh, was of still softer and more watery nature, and its name implies that either hurdles or rude wickerwork bridges had been formerly used for crossing the river or the marshy spots near it.* Along this side, and but a short distance from the shore, there were, at varying intervals of space from each other, three shoals, about the size of ordinary crannogs, and nearly circular in form. They were occasionally so little perceptible as to prove an obstruction for boats, and in the early part of this century the proprietor, after surrounding each shoal with a low wall of masonry, caused a sufficient quantity of soil to be conveyed to them for the growth of a few trees. At that period nothing was known respecting former lacustrine populations in any part of Europe, so that no special examination was made of the nature of the shoals in question. In the present day, however, with the aid of the light thrown upon the construction of lake dwellings by modern discoveries, the position and aspect of the three islets becomes striking, and cannot fail to call to the mind of an observer the old tradition of a "buried city" in Lough Gill.

The number of lacustrine sites in each county in Ireland is marked within a small circle on the map (plate L.), and the lake dwelling area, as at present known, is shown by a shading, light or dark, according to the number of sites. The province of Ulster (including historical notices of crannogs) contains one hundred and twenty-four; Leinster, nineteen; Munster, nine; and Connaught, sixty-nine. This makes for all Ireland a total of two hundred and twenty-one. The ascertained sites are, however, in all probability, but a mere fraction of the multitude that had formerly existed. Further explorations amongst the remains of Irish and Scottish lake dwellings would, doubtless, tend to

* *Irish Names of Places* (2nd Series), p. 7. P. W. Joyce.

strengthen the evidence of these structures having been the work of a people who, at that remote period, formed most probably a homogeneous community.

In the opinion of some theorists, these dwellings seem characteristic of an early wave of immigration from the East—then throwing off its superabundant population as does now the West—and in this manner it is supposed that the lakes of Central Europe and Great Britain became studded with water-laved homes. However, as before stated, they, with a greater degree of probability, sprang up independently by reason of the natural laws which govern man's actions in a semi-civilized state—in Erin, their first founders being rude flint-armed hunters of the *Megaceros*, the bear, the wolf, and their descendants wielders of the pike and matchlock. Recent investigation traces "island homes" back to a period so remote, that the evidences of man's formation and occupation of these retreats prove in their way as interesting as the remains of the buried cities of Herculaneum and Pompeii, for lacustrine dwellings, also, show traces of a species of civilization long passed away (evidences of which were observable on the sites of Venice, Mexico, and London), and the purposes of their primitive founders were alike, whether situated on the lagoons of the Adriatic, the flats of Central America, or the reaches of the Thames.

MAP OF IRELAND
 SHEWING APPROXIMATE
 DISTRIBUTION OF ALL KNOWN
 LACUSTRINE SITES



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