NOTES ON SOME ANCIENT CHILIAN SKULLS AND OTHER REMAINS

BY

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In his "Journal of the voyage of the Beagle," Darwin briefly describes the terrace formation of the neighbourhood of Coquimbo Bay. Being located in the neighbourhood—Serena—during the past few years I thought it a favourable opportunity of making a more detailed study of the district than could have been attempted in a few days stay. The results of this study geological and otherwise, I hope to be able to publish shortly.

Meanwhile, some of the results may be of interest to anthropological students; and may help to throw a light upon the disputed question of the original inhabitants of this part of the continent.

One of the first things that called my attention was the frequent recurrence of irregular shaped mounds, along the terrace edges; or ancient high water marks. At first I supposed that these were drifted sand hills, such as are in the course of formation along the actual coast line, but a closer examination showed that, while in many cases this was so, others were formed almost entirely of shells. It then occurred to me that these might owe their origin to human agency, and have been formed in the same manner as the shell mounds of the Baltic and other coasts.

In such case they would probably contain other remains, perhaps even human relics.

After a careful search, I found my surmise correct. Embedded among the shells and sand, were the bones of numerous animals and birds, some of which are not now found in this district. Occasionally I came upon instruments of stone, shell, or bone, also fragments of pottery and in several cases portions of human skeletons but in such a weatherworn, broken condition, that I could not form an opinion respecting the race they represented. The skulls invariably crumbled away on touch, and even the teeth were so brittle that they would seldom stand the least pressure. This was donbtless owing to the porous nature of the soil, and the action of the moisture and acids.

Only on one occasion did I obtain a skull in such condition as would render even a superficial study possible, and then only

after carefully piecing and cementing the different fragments. (Description 1.)

Not far from Coquimbo on the upper level of the terrace series, are a number of quarries, from which a porous calcarcous stone, much used for filters and building purposes; is obtained. By accident. I heard that human remains were occasionally found there by the workmen. I repaired to the spot, and on questioning the men, they admitted that they did, from time to time, come across such remains, in the deposit immediately above the stone, and that they were generally in a good state of preservation. They invariably buried them again under the increasing piles of debris.

Having obtained this information I set methodically to work on a portion of the ground entirely undisturbed. After three days work. I had the good fortume to find an almost entire male skeleton; in so good a state of preservation, and so little weathered, that it seemed to have been interred only a few years since.

On a subsequeut occasion I was able to recover three other partial skeletons, all of them wanting their lower extremities This was cauced by a curious coincidence. The three interments had been made in a row, whose axis ran from north to south. The space between each separate grave was about 3 feet the heads all pointing in the direction of the rising sun.

On uncovering the rock for a new quarry, the workmen had run their baseline exactly through the centre of the line of graves cutting the skeletons in two and carrying off in the rubbish the lower extremities, leaving intact the upper portions.

At first I thought that this was a burial place of recent date, and might be referred to one of the numerous skirmishes that took place in the neighbourhood, during the revolutions of 1851 and 1859.

But the testimony of the owners of the quarries, a closer study of the remains themselves, and an examination of the soil from which they were taken, convinced me that they were of considerable antiquity. This probability was strengthened by the number of stone objects found buried with the remains, some of them showing no small degree of skill in their manufacture.

A few days later Iwas lucky enough to come across another grave, containing in this case a group of three skeletons; an adult female, and two children, one quite an infant, also several interesting stone objects, among others two mullers of a peculiar pattern, a square stone evidently used as a mortar and some stone ornaments. (see figs.)

A close examination of the ground satisfied me that it had not been disturbed for hundreds, perhaps for thousands of years.

The remains I have mentioned were found at an average depth of four feet nine inches, and the result of my observations incline me to the belief, that since the date of their burial, the whole level has been under the sea and has afterwards been upheaved; the present height above the sea level being over two hundred feet.

My reasons for this conclusion are as follows:— the skeletons are found in all instances in a layer of black deposit mixed with shells, which lies inmediately urpon the calcareons stone, (composed by the bye of minute particles of sand, brokcen shells, and fine fragments of stone, compressed into a solid mass). This black soil is still deposited in the southern part of Coquimbo Bay, where there is little current, and is quite distinct from the other deposit of the bay. The shells most abundant in it are: concholepas, fisurellae, chitonae, patellae & lapas.

Above this black deposit there is a layer of calcareous compound of a yellowish white colour, from 15 to 16 inches in thickness. This produces a very good quicklime and has led to the establishment of limekilns in the neighbourhood. On the top of this again is a bed of sand, with a light topping of gravelly mould. This too is full of shells.

Here then we have three layers of different colours and con ditions. On removing the skeletons plural Iwas most particular to notice in each case, if these three layers were intact, finding that in every instance they were so; a clear proof that the burials had taken place before the deposition of the upper two layers; as in a contrary case, all three wonld have become mixed, on refilling the excavations.

I have been able to íorm no estimate as to the probable date of these burials as the whole country shows such multiple signs of a vast series of submersions and upheavals, that speculation would be vain.

The remains mentioned were so encrusted with the black deposit spoken of, that it was only with great difficulty I could remove it. All these remains have suffered remarkably little from weathering, and in most cases have lost little of their organic substances, being in these respects, quite the reverse to those found in the saddhills and shell mounds. This is doubtlessly owing to the tight packing and extremely fine nature of the deposit in which they were embedded, which is almost impervions to filtering. As an example of this I subsequently noticed that in uncovered parts after three days heavy rain, the moisture had only penetrated to the depth of two or three inches, and that in the parts where it had been most upturned, and so become loosened.

PARTICULAR DESCRIPTION OF THE SKELETONS.

Skull A.

This skull is of medium capacity, (mesocephalic) 1450 c. c. It is also mesozygus, mesognathous and mesaticephalic. Compared with the others of the series it would seem to denote a cross with a race having different characteristics.

The sutures are open and simple; there is a small wormian bone in the lambdoidal suture near the right asterion.

The frontal is well developed though the forehead is narrow in the superorbital region. The glabella and the superciliary ridges are not notiable, forming one smooth contour; but the frontal eminences are prominent, giving a high appearance to the forehead. The general aspect of the face is one of featness, and presents characteristics that have not before come under my notice. The nasal notch is completely wanting, a fact which probably accounts for the high naso-malar index. Fhe nasal bones continue in a line with the forehead, while the bidacryc breadth is only 18 mm; the dacryons being only slightly behind the external surface of the by-nasal suture. This makes the outer edges of the orbits appear to recede, and this gives an internal bi-orbital arc of 98 mm while the chord is only 88 mm; infusing a prosopic element (111.3) to what is essentially a platyopic face.

The orbits themselves are rectangular and mesoseme; the supra-orbital notches pronouced; as is the case with all the foramina.

The maxillaries are short, broad, and remarkable for the very slight concavities below the malars. This helps to give the face its appearance of flatness. The apertura pyriformis is extremely narrow and the nose highly leptorhine (39.2)!! The distance from the nasal spine to the alveolar process is very short, the palate is parabolic, whith a staphylinic index of 95.8. This again is a point which has not before come under my notice especially in Chilian skulls, whether Indian or otherwise. The internal palatine breadth; 46 mm; is much above the average while the internal length 48 mm is less than customary.

The teeth, which are all present, are worn down in a remarkable way; far more so than thave I have ever seen before, even among the lowest savages (Fuegians and Ocas). In this skull in especial, they barely protrude—incisors, canines, and molars alike—four milimeters (plur) from the alveolar processes, and are quite separate *inter se;* the spaces between the molars being about 1 mm, and between the incisors about 2 mm. The superior molars (plur) especially are worn to a sharp exterior edge, being for the most part in a healthy condition, but in a few intances carious.

The mandible is strong and the chin square. There are indications that the muscular attachments have been extremely powerful. The inclination of the ascending ramus; narrow in all the skulls of the series, is about 105°.

Viewed in norma lateralis one notices a flattening of the roof beginning slightly before the bregma and continuing for 60 mm along the sagittal suture; on either side of which there is a slight concavity. The squamose suture is almost horizontal, and is very low, rising in no part more than 30 mm above the zygomata. These latter analso the malars are massive, though not so solid as in skulls **B** and **D**. The temporal crest is not visible, but the post-zygomatic is very prominent. The parietal eminences are conspicuous, and curiously enough both are seriosly damaged. On one side there is a star shaped fracture which extends in every direction to the sutures and was possibly the cause of death; although it may have been post-mortem. On the other side there is a deep indentation; 25 mm in length and 5 mm in depth, but the bone is not fractured or perforated, and may have been caused in youth while the bone was still in a plastic condition.

The skull rests on the occipital condyles, which are full and massive; the mastoids being only slightly developed, but tbe digastric grooves are wide and deep.

On the whole this skull is the best developed of the series, the face being weak but denoting a degree of intelligence wanting in the others. The frontal region is extremely full in the spheno-frontal portion, bulging along the whole temporal crest. The roof of the skull is flattened as is also the posterior surface, between the parietal eminences rounding off in the occipital region.

Skull B.

This skull is of a far ruder type than **A.** with a much smaller cranial capacity. (1360 c. c.) It is also more dolicho-cephalic and more hypsicephalic. The bones are strong and massive and the sutures very simple.

In norma verticalis it is ovoid in form, phaenozygous in a high degree, and markedly prognathous, especially in the subnasal region. The pariental eminences are prominent as are also the frontal; these latter being fused, which cause the forchead to bulge somewhat in the centre. The strongly marked supraciliary ridges are distinctly discernible from above.

The greatest breadth is at the parietal protuberances, the skull sloping gradually from these points to the mastoids. The sides

are very much flattened, presenting two surfaces; one anterior to, and the other posterior to, and below the parietal eminences.

In norma lateralis the great prognathism and the massive nature of the jaws and malars immediately call the attention. The forehead is receding, and the whole sagittal curve, from the metopic point to the inion forms a single elliptic are, without any flattening at the bregma, or at the post-bregmatic portion of the skull.

The zygomata are strong and the post-zygomatic ridges distinct; with indications of remarkably developed muscular attachments. The temporal crest is also prominent, but very irregular in outline, rising obliquely to a point vertically above the *meatus auditorius*, whence it falls to the parietal eminence. The mastoids are insignificant, but the mastoid foramina are unusuaily well marked; as are all the foramina of this series.

The digastric grooves are deepand broad, and the occipito-mastoidea sutures form parallel graoves of considerable size. The occipital condyles are slight, but pointed and projecting.

The palate is elliptical in shape, with a staphylinic index of 80.1.

In norma facialis, what strikes one at once is the negro type of face, with its massive jaws, prominent malars, & overhanging glabella, and superciliary ridges.

The face is mesopic and leptoprosopic but has a broad appearance, owing to the fulness of the malars.

The bidacryc distance is rather more than is usual in American skulls. The nasal bones are entirely different in formation to those in **A**; the bridge being depressed, but the lower part of these bones much wider than at the nasion.

The apestura pyriformis instead of presenting sharp angles is rounded at the corners and slightly truncated: the nasal spine is prominent.

The orbits are squarish, and the bony rim massive, and what is peculiar have two supraorbital notches. There is a considerable facial and subnasal prognathism, the upper jaw projecting greatly. Most of the teeth are wanting; their loss being post-mortem. The alveolar processes show that they were protruding. The few molars left are much worn down, but not the same degree as in **A**.

The lower jaw is strong and heavy; the chin square and full, fairly high symphysis, and moderately deep sigmoid notch. The thickness of this mandible is unusual; being 18mm. both at the point of the chin and at the second molar. The angle of the narrow ascending ramus is slightly everted.

The occipital bone is small but prominent and very massive at the inion; the thickness at this point being 13mm. The asterions are well inside the occipital plane, both the mastoids and the squamae being visible in norma occipitalis.

The left facial portion of the skull has been burnt; the zygoma and coronoid being completely carbonized.

The frontal is deeply scarred on both sides' but whether this is the result of wounds. or a pathological condition, I have not been able to decide. The scars of which there are varions, are from 2 to 6 centímetres long and about 1mm in depth; one of them is bifurcated. Possibly they may only indicate a constricted superorbital nervons system, such as oscurs in some south African races; but similar cases have not before come under my notice in South American crania.

Skull C.

The most conspicuons feature of this skull is its diminutive size. Its capacity is only 1080 c. c. (measured approximately with N.° 8 shot.) I say approximately as the whole left temporal bone is wanting, and to measure the cubic contents I had to subititute one of wax,

In general appearance this skull resembles **A**., the flatness of the face being due to the same reasons; that is the continuity of the nasofrontal line; the fulness of the maxillaries and the prominence of the canine alveolars, thus flattening the whole anterior part of the alveolar process. The face does not look as broad as it otherwise would, owing to the want of the left zygoma; the right being very salient. Its general conditions are: slightly microseme, leptorhine, very platyopic, and leptoprosopic

The forehead is narrow and low, receding abruptly from the metopic point, but is full in the spheno–frontal region as in **A**.

The infra–orbital suture is plainly marked in this and in other skulls of the series.

The orbits are rectangular, and here again as in **B** the double supra–orbital notch is seen. The bones of the nose are straight and narrow, and the sub–nasal portion of the face extremely short and prognathous.

Seen from above the skull is elliptic, and phaenozygous in a high degree; the sutures open and simple.

This skull like **B** is scored in the frontal region, but it is difficult to say whether this is accidental or pathological.

In norma lateralis it presents some features worthy of note.

The bulging of the lower portions of the parietals and of the squamose portions of the temporals is very pronounced; as is also the arching of the zygomata. The temporal crest is not noticeable except in the frontal. The upper portion of the coronal suture is depressed which causes a corresponding bulging, anterior and posterior to the bregma. The frontal also bulges over the central line; but flattens away over each orbit.

The parietal eminences cannot he precisely designated owing to the rounding curves of this part.

Different to the other skulls, the maximum breadth is not found in the bi–parietal diameter, but in the temporal region, 20 mm below the squamose edge.

The skull is not symetrical, one parietal being higher than the other, while the right side of the occipital protrudes 10 mm more than the left. Below the inion there are two deep impressions, where the recto–mayor muscles were inserted. The mastoids are small and pointed, the digastric grooves very wide, and the condyles insignificant. The palate is V shaped, long and narrow; the teeth worn even more than in A; forming a sharp cutting edge on the outslde, and worn down to the alveolars on the inside. The lower jaw is wanting but must have been narrow and pointed.

This skull is the most chamæocephalic of the whole series although it is well within the limits of orthocephaly, with an index of 71. 2.

As I have already mentioned; the skeleton to which this skull belonged was found buried together with she skeletons, of two children, one of an infant, and the other evidently not more than four years old. But the bones were in such a fragmentary condition that it was impossible to take any measurements or even to make any detailed study.

Skull. D.

On examining this skull the theory of the American anthropologists, as to the probability of the primitive inhabitants of this continent having been of the Eskimo type immediate (omision) by ocurred to me. Here we have many of its peculiarities reproduced, although in some cases slightly modified. The Fuegians also, if one allows for distance and altered circumstances are in many respects very similar.

In this skull we have the dolichocephaliy (75.68), the marked scaphoid character without any sign of synostosis, the infra–orbital sutures, the massive nature of the body of the mandible, the wide palate and worn teeth, the flat face with its prominent malars, the considerable sub-nasal prognathism, the prominense

of the chin, and the relatively narrow apertura pyriformis of the nose, and the small size of the mastoids and condyles; all in accordance with the cranial characteristics of the Esquimaux.

The sutures are all well defined, but simple, the bones thick and very heavy.

All the protuberances and foramina are srrongly marked.

In norma verticalis this skull has the shape of truncated cone with a rounded base. It is slightly phaenozygous and highly prognathous.

The parietal eminences are very prominent and the frontal protuberances well indicated. As in C. there is a slight depression at the bregma.

In norma occipitalis the skull is pentagonal in outline; the roor being sharply pointed and the sides vertical. The mastoids are larger and the digastric grooves shallower than in any of the other skulls. The occipital, and the posterior portions of the pariental and temporal bones are assymetrical, there being a considerable bulging on she left side of the lambda, especially in the vicinity of the mastoid. The skull is akrocephalic the breadth-height index being 102.9.

In norma lateralis the forehad is seen to be full and rather high. The glabella and superciliary ridges are insignificant. The sagittal curve rises to a point at the bregma rounding off to the lambda; there being faint post-bregmatic concavity. Owing to the protrusion of the temporal squamae and the flattening of the zygomata; the temporal fossae are better filled than in any other of these skulls; although the sphenoids are deeply grooved.

Viewed in this norma, three planes present themselves. One falling from the sagittal suture to the temporal crest; the second from the temporal crest to the zygomata, and the third including the lower posterior part of the parietals; behind the line running from the *meatus auditorium* to the parietal eminences; which latter are strongly marked. There is also a considerable flattening from the obelion to the union.

In norma facialis the fulness of the maxillaries spoken of in the other skulls is still a prominent feature. The face is leptoprosopic and verges on platyopy, with a nasomalar index of 108.6.

A point worthy of note is that in all the male skulls of the series the orbital measurements are identical.

The nasal fossae are of the true pyriform shape, and the index places the skull in the mesorhine group. As I have remarked

in the case of other skull of the series, the infra-orbital suture is very apparent; and seems to persist till old age without obliteration.

The bidacryc distance is small.

The frontal is very narrow; allowing the whole side of the skull to the parietal eminences, to be seen. The palate is parabolic and unnsually of (17 mm. from the ceutre of the palatine torus to the alveolar plane.) The teeth are small, rather worn down, but all sound. The chin is prominent, but the sigmoid notch is not very deep owing to the vertical setting of the inferior incisors; those of the upper jaw meeting them obliquely, genü thus causing great subnasal prognathism.

The mandible though strong is not so massive as in *A* and *B;* the ascending ramus being small (omision) and the condyles slight. The teeth in this jaw presents an anomaly in having only one lateral incisor on either side, the other being replaced by a molar, with its crown and double root perfectly formed. The molars present a considerable inward obliquity owing to which the exterior edge is much more worn than the interior. The apophysis are very protuberant with the digastric notch well formed.

The foramen magnum is pyraform and asymetric; the condyles insignificant and the jugular apophysis extremely small, The rugged surface of the lower portion of the occipital denote that the neck museles must have been very powerful.

Skull. E

This skull is very similar in general outline to **D.,** having many points in common with the rest of the series, and also some special characteristics of its own. In respec to the age of the individual, it belonged undoubtedly to the oldest member of the group. The sutures, especially the coronal, are partially synostosed. The forehead is low but not retreating, and the parietals rise to a peak about 4 centimetres behind the bregma. The skull is scaphoid but not so much as **D;** dolicho-cephalic (71.6) and phaenozygous; with a marked sub-nasal prognathism.

It is not in such perfect condition as the others of the series, the right parietal being badly damaged.

Viewed in norma verticalis it is ovoid in form, with a capsular occipūt. All the eminences are prominent, the glabella especially being strongly marked.

In norma lateralis the development of the temporal crest at once fixes the attention. It is so strongly marked in the frontal region as to cause a depression immediately above it. In the

parietals this ridge is duplicated leaving a slight but well marked furrow between the two branches. The flattened planes noticed in D are here reproduced, but the occiput is much more protruding.

In norma facialis, the flat features, the narrow forehead, the continuous fronto-nasal line, the prominent canines and the double supra orbital notch are all in accordance with others of the same group, although the wider malar diameter and the broad short nose (nasal index 56.5) indicate individual variation.

Although the majority of the sutures are obliterated, the infra-orbital suture is still distinctly marked. Another significant fact is that the orbital measurements are exactly identical with those of the other male skulls of the series. Is this a racial distinction or a mere coincidence?

The malar orifice is double on both sides, there being a space of about 10 milimeters between the ducts.

The general characters of the face are chamaeprosopic, platyopic, mesoseme, and platyrhinic.

The lower mandible is broken in two, and is much weathered. All the incisors are present but are worn down to the alveolar borders, while the molars with one exception, were lost previons to death. The ascending ramus forms a much more obtuse angle than in any of the other mandibles, undoubtedly owing to the age of the individual. The bi-condyle breadth is unusually great (128 mm exterior measurement.)

The palate isshaped and elongated and the upper teeth all wanting with the exception of 3 incisors. worn down to the alveolar. The foramen magnum is assymetrical and rhomboidal in form, and the condyles larger than usual.

Skull N.° 1. FROM SHELL MOUNDS.

This skull is only fragmentary but in general outline quite different to those already described. From its size it would appear to be that of a child and the thinness of the bones seem to point to the same deduction. It is mesaticephalic in form, with an index of 80, with narrow sloping forehead, and gently rounded roof. The parietal protuberancos are barely noticable, and the greatest diameter is found below and slightly to the front of them.

As only the frontal, parietals and a portion of the occipital are present it is not easy to make a comparison but I should have no hesitation in saying that it belonged to a distinct type to the series lettered alphabetically.

Measurement	A	B	C	D	E	N.° 1	Observations
						?	
Sex.....	Male	Male	Fem.	Male	Male	Male	
Age.....	30.40	35	30	30	60		Approximate.
			Diameters				
	mm.	mm.	mm.	mm.	mm	m m.	
Antero-posterior.....	176	177	167	181	180	164	Maximumm
Transverse.....	141	135	128	137	129	121	
Frontal maximum...	116	112	102	109	115	102	
" minimum ...	89	95	86	94	91	86	
Height.....	137	143	119	141	134	—	Basi-bregmatic
Basi-nasal.....	96	100	91	98	98	—	
Basi-alveolar.....	87	98	97	96	99	—	
Foramen magnum..	38	34	33	32	37	—	Length
" "	34	30	26	28	28	—	Breadth
Bi-orbital.....	100	197	96	101	104	—	External
" "	88	96	88	93	96	—	Internal
Orbital length.....	40	40	37	40	40		All the male skulls
" breadth.....	35	35	31	35	35		Are equal in these
Bi-dacryc.....	19	23	19	21	22		diameters.
Nasal length.....	51	50	47	49	46	—	
" breadth.....	20	25	22	24	26	—	
Palatal length.....	48	53	48	53	59	—	internal
" breadth.....	46	43	40	42	43	—	
Bi-jugal.....	107	116	108	110	114	—	
Bi-zygomatic.....	126	130	129	127	132	—	
Ophryo alveolar.....	76	81	77	80	73	—	
Nasi alveolar.....	66	72	63	68	64	—	
Curves.							
Frontal.....	126	128	122	130	126	113	
Parietal.....	114	134	110	124	138	108	
Occipital	134	112	110	120	111	—	To opistion including basinasal diameter measured over bregma.
Total sagittal.....	470	474	433	472	473	—	
Supra auricular.....	325	320	290	325	316	—	
Total horizontal.....	510	506	480	499	505	—	
Naso-molar.....	98	105	93	101	102	—	
Indices.							
Cephalic.....	79.2	76.27	76.6	75.68	71.66	79 87	
Lentgch-height.....	77	80.2	71.2	73.9	74.4	—	
Breadth-height.....	102.9	105.9	92.9	101.9	103.8	—	
Orbital.....	86 5	87.5	83.3	87.5	87.5	—	
Nasal.....	39.2	50	46.8	48.9	56.5	—	
Palatinal.....	95.8	80.1	83.3	79.2	72.9	—	Staphylinic
Ophrio-alveolar.....	55.8	68.4	59.5	63	55.5	—	
Stephanic.....	77.5	84.8	79.4	86.2	81.2	84.3	
Foramen-magnum...	90	88.2	78.8	87.5	75.5	—	
Naso-molar.....	111.3	109	105.6	108.6	106.2	—	
	c. c.	c. c.	c. c.	c. c.	c. c.		
Mandibles.		mm.	mm.	mm.	mm.		
Bi-condyloid breadth	111	120	—	106	128	—	External
Ramus (height)...	44	50	—	45	40	—	
" (breadth)....	31	34	—	32	35	—	
Symphysial height...	30	36	—	32	28	—	
Molar height.....	26	31	—	28	—	—	A base 1st. molar
Coronoid height.....	56	56	—	57	59	—	B 2nd. molar
Condyloid "	59	69	—	58	58	—	D base 2nd molar.
Bi-gonial curve.....	181	200	—	191	206	—	
						—	

Measurement	A	B	C	D	E	N.° 1	Observations
	mm.	mm.	mm.	mm.	mm.	mm.	
Bi-gonian breadth...	97	96	—	90	97	—	
Ophryo-ment. height	—	133	—	128	114	—	
Naso-mental "	—	116	101	116	—	—	
Bi-stephanic length.	—	109	18	108	—	—	
Spino-alveolar heigth	—	22	20	20	—	—	
	c. c.	c. c.	c. c.	c. c.	c. c.		The capacity of skull N.° C is approximate.
Capacity.....	1450	1360	1080	1330	1295	—	
Other bones.							
Radii.....	23	23.5	21.3	24.1	22.6	—	Where possible the bones of the right side are those whose measurements are given.
Ulnae....	17	26.5	25.2	27.3	26	—	
Humeri.....	32	33.6	28.5	33.9	30.7	—	
Tibia.....	32.7	—	31.5	—	—	—	
Femur..	44.7	—	41.3	—	—	—	
Clavicle..	13.5	13.6	12.4	13.9	13.1	—	

OTHER OBJECTS FOUND.

Two mullers of peculiar form, shaped for the hand to grasp. and indicating considerable use. (Figs. 1 and 2.)

One flat stone with scalloped sides, much worn in the centre, and evidedently used as a mortar (Fig. 3.)

A flat thin stone, probably used as an amulet or ornament. (Fig. 4.) This stone is highly polished and is of a kind of yellowish white marble. It has been perforated at one end by three small holes, which by the constant friction of the suspending cord, have become greatly elongated; so much so that one has cut right out and a second has been bored beneath it. It indicates long use and may possibly have been a family relic. This stone was found with the mullers and mortar, buried with the female skeleton A smooth thin axe head, highly polished, and broken at its upper extremity. (Fig. 5.)

A flint spear head (Fig. 6 roughly chipped, both extremities broken.

A polished axe head. (Fig. 7) This has a slight groove round the narrow end, evidently where a cord has been used to fasten it to a haft.

A broken flint instrument rudely chipped, which may have been a leafshaped spear head. (Fig. 8.)

A broken stone ring, much worn probably used as a weight for nets· (Fig. 9.)

A stone ball probably used for the same purpose. (Fig. 10.)

Several fragments of coarse pottery were also found. This was made of black clay mixed with fine white sand. It bears no mark of scoring or decoration, and is of the rudest description.

General Observations.

It will be as well here to recapitulate the distinctive characteristic of this series of skulls. These consist of the remarkable thickness and weight of the skulls, especially in the malar and occipital regions; the general flatness of the face; the continuons fronto–nasal line; the coincidence of the orbital measurements; the great width of the palate and worn condition of the teeth; the flattened surfaces of the walls and roof of the skulls; the tendency to scaphocephaly; the persistent infra–orbital suture; the double supra–orbital notch, and the prominence of the canines.

Their general dimensions place them among the subdolicho–cephalic group of races, their cephalic index being just a trifle over 76; although one A reaches 79. 2.

The general type is quite distinct, even to a casual observer, from that of any other Chilian race which I have examined, including that of the natives of the time of the Spanish conquest.

In Chilian and Araucanian skulls the greatest transverse diameter is, in the great majority of cases, found immediately above the squamose edges of the temporals, while the parietal protuberances ase rounded and little prominent. With the skulls in question on the other hand, the greatest width occurs exactly between the parietal prominences, while they narrow away considerably towards the temporals.

The roof of the skull is also far less symmetrical than in the Chilian and Araucanian, owing to the flattening of the parietals, both above and below the temporal crest, which them a scapho-cephalic tendency.

The prognathism of these skulls is very marked, especially sub–nasally. The angle ranges from 71° to 72°, abont that of the Esquimanx.

The frontal is high but narrow, quite distinct from the Araucanian skulls, in which it is broad but depressed.

The general appearance of the face is one of extreme flatness. This is caused principally by the continuity of the fronto–nasal line; (there being no notch below the glabella, the nose continuing in a line with the forehead); and the fulness of the malars.

The orbital ındex is high, and in four of the five skulls under study was exactly the same. The nasal index is low, while the zygomatic diameter is less than that of any other Indian race found in Chile.

Another peculiarity found in all the skulls is the great palato-maxillary diameter the average (external being 66 mm.

The *t*eeth in all of them are worn down in a most extraordinary way, not only the molars but even the incisors. In two of

the skulls these latter only protrude from the alveolar processes about 4 or 5 mm, and are quite separated one from the other, the space between each being from 2 to 3 mm. Teeth and molars are worn alike to a sharp exterior edge and present a concave surface.

A point of especial importance, is the persistent infra-orbital suture, which continues even in old age, as evideneed by skull *E*. This together with the double supra orbital notch is a distinctive feature in all the skulls of the series, and is common among the Fueguians and Esquinaux.

The capacity of the skulls is very low, giving an average of only 1305 c/c. One of them a female only reached 1080 c/c. althoug it does not show any signos of being abnormal.

The bones of the body seem to indicate that this race was of low statute, and slightly buit. The average length of radii of the four male skeletons is only 23.3 cm; and calculating this bone by Humphreys' table at 14.15% of the total length of the skeleton would give an average height of 165.7 cm or 5.ft 4½in more or less. The female skeleton on the other hand only measured a little over 1 m 50 cm. or 4ft 11½in.

The state of civilization to which this race had attained seems to have been very low. They were evidently in the transition stone age, as as the instruments found are some rudely chipped and some fairly polished.

No sign of metal was found, but fragments of rude pottery without, anyattempt at decoration, were numerous.

It is probable that their principal food was shellfish; but they also ground roots or berries, as is shown from the worn state of the rude stone mortar. They also had some means of catching or killing wild-fwol as the bones of such are abundant.

Their mode of burial would seem to indicate that the sun had an important place in their religious ideas, and a belief in a future state is suggested by their burying arms and houschold utensils with their dead. It is also probable that they indulged in personal decoration as the pierced stone (fig. 4) and a number of perforated shells of small size have evidently been used as ornaments.

Who were these people? Whence did they come? Whither have they gone? These are questions that with the scanty data set forth I cannot venture to anwer; but I would call the attention of anthropologists towards several points which while common among the Fuegians & Esqnimaux, are persistent in the remains here presented.