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THE PHOTOGRAPH AND SKELETON OF A NATIVE AUSTRALIAN.

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IN March, 1891, the Peabody Museum received by purchase from Mr. A. P. Goodwin a large collection of ethnological objects from Oceania. Among these were the photograph and skeleton of a native of Lismore, who was known as Neddy Larkin. As a perfect skeleton and photograph of an Australian subject in life are not often met with in the museums of this country, Professor Putnam, the Curator of the Museum, placed the skeleton and photograph in my hands for study. Mr. Goodwin's letter, in which he states that he knew Neddy Larkin, saw him buried, and personally secured his skeleton, is on file in the Museum. Thus there can be no doubt that the skeleton is really that of the individual of the photograph.

Lismore is on the Richmond river in the extreme northeastern part of New South Wales. According to an ethnographical map of Fraser, this region of New South Wales is inhabited by the Paikalyug tribe.

PHOTOGRAPH.

Judging from the photograph and skeleton, Neddy Larkin must have been about fifty years old. There is nothing especially noteworthy brought out by the photograph. It presents to us simply a typical specimen of a native of New South Wales. The beard apparently is slightly gray, and evidently has been trimmed quite short. The hair is long and in the usual state of disorder, but seems rather straighter than one usually finds in a native of Australia. The deep set eyes and overhanging brows are quite prominent, and give some indication of the massive superciliary ridges which we find on the skull. The nose is very broad but not flat, and is well shaped. A depression between the lower lateral cartilages of the nose is well marked and has almost the appearance of a slit in the nose. The body is not so lean as is usually the case with Australians, judging from several photographs before me. The arms are covered with long, thick hair, and hair can be seen thickly scattered over a small area high up the breast. The body below the waist is not visible. In the left hand is held a rough boomerang. On the upper left arm (the upper right arm is hid by the fore-arm) and on the breast are plainly seen the usual marks of adornment — long straight brands or scars. They run entirely across the breast at close intervals, the highest one being placed just above the mammæ. At least seventeen lines are visible and there may be more which can not be seen. On the arm thirteen scars or "mom-bari" are visible; they run lengthwise and are about eight

inches in length. The primary significance of this peculiar form of tattooing is not known and has been forgotten even by the natives themselves. Concerning the method of operation, Frazer says "the brand is cut with a piece of flint or of a glass bottle in some simple pattern; the cuts bleed a good deal, and to make them deeper the knife is applied again and again. While the wounds are still open, hoar frost is rubbed in, or charcoal, and that causes well-marked ridges to remain permanently there. The thing is done when the person is young, perhaps from 6 to 12 years of age."

The anterior edges of the sterno-cleido-mastoid muscles are unusually prominent and make a well-defined depression between them.

SKELETON.

The skeleton is almost complete, only a few of the terminal phalanges being missing. The extremities of both hands and feet have a charred appearance as if from having been in fire. Otherwise the skeleton is in good condition. The length of the entire skeleton is 1616 mm. which with 35 mm. for the soft parts would make 1651 mm. for the stature of Neddy Larkin. In taking the height of the skeleton I followed the method employed by Dr. Dwight and fully described by him in the Medical Record of Sept. 8, 1894.

Examining the length of the long bones we have the following measurements:

Humerus	272	mm.
Radius	253	
Ulna	272	
Femur, oblique length	440	
Tibia, maximum length	381	

From these measurements some interesting observations can be made. The proportion of the humerus to the total

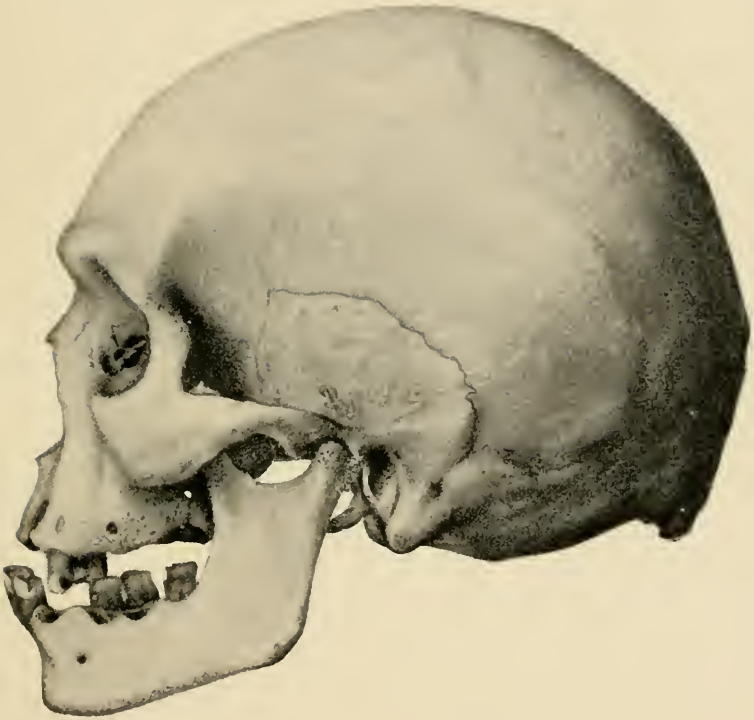
length of the skeleton is 20.3 which is even greater than that given by Humphrey for Bushmen. The relation of the radius to the stature is 15.6 which is approximately the figure given by Hovelacque and Hervé. The relations of the femur and tibia to the skeleton are 26.8 and 23.2 respectively. The antibrachial index is 80.3 which is very high, and approximates that of the higher apes more closely than does the same index in the African negro.

The torsion of the humerus is 136 degrees. According to Hovelacque and Hervé, the degree of torsion of the humerus in the human family is lowest among the Australians.

SKULL.

The skull is remarkable in many ways. The general surface is very smooth and it is almost impossible to make out any muscular ridges. In addition to the sutures which are normally closed in an individual of this age, the following are more or less completely synostosed : the coronal, sagittal, lambdoidal, spheno-frontal, spheno-parietal, malo-zygomatic, malo-frontal, nasal, naso-maxillary, intermaxillary, palato-maxillary and interpalatal. The original degree of serration of the cranial sutures cannot be determined.

Norma lateralis. — There is a considerable amount of alveolar prognathism, rather more than one usually finds in an Australian skull. The teeth are nearly horizontal. The nasal spine is heavy and prominent, a character not usually associated with the lower types of crania. The nasal bones are not prominent. The glabella, while very highly developed, is entirely obscured by the enormous development of the superciliary ridges. The inion is equally massive and projects downwards so that it supports the posterior region of the skull. The mastoid processes are not prominent. The temporal ridges can



no longer be distinguished. A faint spheno-parietal suture can be made out about 4 mm. in length, which gives the so-called pterion in H. The curvature of the vault of the cranium is very gradual, the curve of the frontal region passing imperceptibly into that of the parietal; in type it approaches the Neanderthal. The external auditory meatus is unusually large and is elliptical in shape.

Norma verticalis.— With the skull in this position its extreme length and the narrowness of the frontal region are very striking, while the prominence of the supra-orbital ridges is equalled by that of the external angular processes of the frontal bone. The parietal eminences are small but well marked. There is nothing which approaches the parietal crest which often marks skulls of an inferior type. The parietal foramina have entirely disappeared.

Norma frontalis. — From a front view the face seems all orbits and nose, so great are their cavities. The orbits are especially profound and large. The angle of inclination of the transverse diameter seems unusually great. The lachrymal bones are obscured by the frontal process of the maxillary bones and none of the lachrymal sutures can be determined. The infra-orbital groove continues broad and shallow, almost to the orbital crest. On the right orbit is a supra-orbital foramen, on the left side a shallow notch is hardly recognizable. The nasal bones broaden and flatten out very much at their inferior border. The inferior border of the nasal cavity is not sharp as it usually is in Europeans, but is concave so that the nasal cavity is not well defined and passes gradually on to the alveolar region. The maxillary bones are broad, especially through the alveolar region. The canine fossæ are extremely shallow, a character the reverse of the European type.

Norma posterior.—The skull is hypsicephalic or narrow and high, but not to an extreme degree as is usually the case with Australian skulls. The region just above the occiput and below the parietal eminences is slightly flattened. The transition of the posterior region is very marked at the region of the inion where the occipital bone passes forward very abruptly.

Norma inferior.—While the external occipital crest is fairly prominent, no trace of the inferior curved line can be made out. The digastric and occipital grooves are very deep and pronounced and the foramen ovale seems to be of unusually large size. The zygomatic arches stand out prominently and the prognathism already spoken of is seen in the distinct forward slant of the alveolar process. The surfaces of the alveolar process are broad and are more or less absorbed, especially in the regions of the incisors.

From a morphological consideration of the skull we pass to the craniometric characters. The following measurements were taken:

Capacity	1290	cc.
Maximum length	191	mm.
Maximum breadth	131	
Height, basion-bregna	140	
Index, length-breadth	69	
Index, length-height	73	
Minimum breadth of forehead	98	
Breadth of base	102	
Height of face, nasal point-alveolar point (A)	71	
Height of face, nasal point, mental point (B)	118	
Breadth of face, bi-zygomatic diameter	131	
Index face (A)	54	
Index face (B)	90	
Height of nose	50	

Breadth of nose	32 mm.
Index of nose	64
Height of orbit	38
Breadth of orbit	44
Index of orbit	86
Length of palate	52
Breadth of palate, between lateral canines (A)	32
Breadth of palate, between 2nd molars (B)	43
Index of palate (A)	61
Index of palate (B)	82
Mandibular angle	124
Basi-alveolar length	100
Basi-nasal length	97
Index of alveolar gnathism	103.9

The capacity, 1290 cc., is somewhat higher than that usually given for Australians, Turner giving 1230 cc. and Quatrefages and Hamy, 1269 mm. The cephalic index of 69 proves the skull to be longer than the average, Quatrefages and Hamy, and Broca giving 71. The vertical index is about the average for Australians.

Both facial indices indicate a short, broad face, a characteristic trait of Australians. The nasal index of 64 is unusually high, the average among the Bushmen being only 60, while the average for the Australians is 57. The orbital index also is unusually high, 80 being the average. The two palatal indices show the palate to be of a very low type, the posterior diameter being proportionally much greater than the anterior. The other measurements do not merit special comment. To conclude with the skull, it is notable for its amount of synostosis, small capacity, pronounced dolicocephalism, mesosemc orbits, platyrhine nose, broad palate, and prognathism.

Teeth.— The incisors, right canine, both 3rd molars, and the left second molar of the upper teeth, and the first and second premolars and all the molars of the left side

of the lower teeth were lost during life and the alveoli are considerably absorbed. Of the upper teeth there now remain only the premolars of the right side and the canine and first premolar of the left side; of the lower teeth there yet remain the incisors of the left side and the three molars of the right side. The crowns of the teeth are very much worn down, especially those of the front teeth. The wear on the lower lateral incisor has been from side to side and not from before backwards. The degree of wear corresponds in general to No. 3 of Broca's scale. Every one of the nine teeth present is more or less affected by caries, these being unusually large in the molars of the lower jaw.

TRUNK.

The vertebræ and ribs are of the usual number. The first rib is extremely short and atavistic, even after making due allowances for the general slightness of the skeleton. The sternum presents no peculiarity whatever. Like the other bones of the skeleton it is slight, short and very narrow. The length of the manubrium is 47 mm. and the greatest width 50 mm. The length of the body is 99 mm. Thus the general rule prevails here, the body of the sternum in males being a little more than double the length of the manubrium. The clavicle is short, thick, massive and only measures 118 mm. in length, whereas a length of 145 mm. for a European clavicle would not be excessive.

Scapula.— The body of both right and left scapulæ is exceedingly delicate and thin, so much so that there occur, especially in the left, numerous irregular foramina, there being one in the supra-spinous region with a diameter of 15 mm. There is also, in the left scapula, a large oval foramen in the centre of the spine just where it is differ-

entiated from the body. In the same bone the configuration in the region of the suprascapular notch is very peculiar, and deserves a brief notice. This notch in Europeans is generally well differentiated and lies just at the posterior border of the base of the coracoid process. In the anthropoid apes a distinct notch does not appear at all, there being simply a gradual curve along the entire superior border. Now in the left scapula we find neither the notch nor the gradual curve. Instead there is a prolongation of the anterior process to within 10 mm. of the base of the spine, then it projects backwards and slightly upwards for a distance of 8 mm.; then it passes upwards and decidedly forward and reaches the crest of the spine. Thus there is formed a squarish notch, the sides of which measure approximately 10 mm. and the posterior superior edge forms with the border of the body proper an extremely acute angle.

This same region on the left scapula is not so anomalous but is of perhaps greater interest, for there is not a notch at all but a clearly defined parabolic curve, which in no wise differs from that of the scapula of the orang.

There is yet another peculiar difference to be noted between the right and left scapula. In the right scapula the external border is decidedly T shaped almost throughout, the outer border being 10–12 mm. broad, but there is no abrupt increase in width as we approach the acromion as is usual, but instead only a gradual widening until the end is reached, where there is the maximum width of 25 mm. The termination of the process is squarish and only projects 22 mm. beyond a line perpendicular to the glenoid fossa. The spine of the left clavicle is decidedly heavier and more massive in every way, and its termination is more typical of the human form than that of the left. The tip of the external border of the acromion extends beyond

the plane of the glenoid fossa about 40 mm. or nearly twice as far as it does in the right clavicle. The coracoid processes are approximately the same in both specimens, except perhaps that that of the left is a trifle more massive. The superior third of the subscapular fossa of the right bone is decidedly more concave than the left, so much so that the supraspinous portion turns sharply forward at an angle of about 45 degrees.

There remains to be noted the character of the inferior borders with their angles. Without attempting to give the degree of the angle with accuracy, for that is well nigh impossible, I may say it is evidently under 35°, which is about the minimum average for man. But the interesting point to note is the fact that the axillary and inferior vertebral borders are nearly straight and form an angle with approximately straight sides, so that there is little difference in this respect from the orang's scapula.

When we consider the measurements of the two bones singularly there is no apparent difference between them, so they may both be given together. The measurements are as follows:—

Breadth	102 mm.
Length	145
Infraspinous length	116

From the first two measurements, there is obtained the scapular index, which in this case is 70.3. This is considerably higher than the average in Europeans, which is about 65. It agrees pretty nearly, however, with the index given by Flower and Garson for Australians and other inferior races, and corresponds to the figure given by Broca for the gorilla. Perhaps of still greater interest is the infraspinous index. Here, according to Dwight, the lowest of the gorilla and chimpanzee exceeds the

highest infraspinous index of man. The infraspinous index of the scapula under consideration is 80. This is exceptionally low, even for very inferior races.

The left scapula has the singular distinction of bearing a rifle ball of lead deeply imbedded and partially covered by new bone growth, in the subscapular fossa just beneath the neck of the spine.

Pelvis.— The individual varieties of the pelvis are so great even in the same race that it seems almost useless to give the measurements of a single specimen. Yet any observations on a skeleton without taking into consideration those of the pelvis, would be decidedly superficial. The pelvis as a whole is remarkably slight and compact. The width between the iliac crests, the maximum width of the pelvis, is 255 mm. which is about what we should expect, considering the general slightness of the entire skeleton. The measurements of the true pelvis are as follows : Antero-posterior diameter 110 mm., transverse diameter 111 mm. This gives approximately 100 as the pelvic index, which is about the usual thing in males—in females the transverse diameter is appreciably longer, relatively, than the antero-posterior diameter, so that the usual pelvic index is somewhat less than 100 for females. The width between the tubersites of the ischia is 118 mm. Of the other numerous and less important measurements which might be taken on the pelvis, I have made only three. The first two are the maximum height, 188 mm., and the maximum width, 158 mm. With these we obtain the height-index of the pelvis which in this case is 80.3.

Sacrum.— The sacrum possesses the usual number of vertebræ, five, and is characterized by its length, which is a feature common to Australians and other inferior races. Its maximum width is 96 mm. while the maximum length is 101 mm. This gives a sacral index of 95. For

the maximum diameter to be less than that of the length is the rule in males, but the index 95 is rather low, even for Australians, as 99 is usually given as the average index and 94, according to Turner, is that of the Andamanese. The average sacral index in the European male is about 112, while that of the anthropoid apes is as high as 87 in the orang. Thus here we have evidence of a low type of skeleton.

LIMBS.

The length of the limbs has already been given. The diameter of the head of the femur is 43 mm. which is considerably less than what we should expect. The neck of the femur is very short, measuring only 21 mm. on the dorsal side. The right tibia is peculiar in that there is a high ridge or crest which surmounts the spinous process of the head and rises to a height of 3 mm. above the lateral tubercles. The fibula is curiously shaped and can be described with great difficulty. Its posterior border is very sharp and this sharp edge extends to the centre of the bone. The inner and especially the outer surfaces are highly concave; in a cross section of the upper extremity it would present an inverted T shape, while toward the centre it is more nearly five-sided, the three larger surfaces being decidedly concave. The humerus is not perforated. The head measures but 39 mm. in diameter.

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