

Letters to the Editor.

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Acromegaly among the old Northmen.

I HAVE read with great interest the description of the Gardarene skull given by Sir Arthur Keith in his "New Discoveries relating to the Antiquity of Man". No pathologist will, I think, doubt that the skull is acromegalic, and this raises the interesting question: Was there anything in the terribly hard life of the Icelandic and Greenland colonists that led to pituitary disorder and so to acromegaly?

There has recently been published a good English translation by Mr. E. R. Eddison of the Egil Saga, and this I think suggests that Egil himself suffered from pituitary disease culminating in definite acromegaly. First as to Egil's personality and appearance. Egil Skallagrimson, the hero of the Saga, lived about a thousand years ago; his activities were not limited to the northlands—Norway and Iceland—for he fought in the battle of Winaheath under Athelstane against Olaf, the half Danish king of Scotland. It is after the victory, as he sat in Athelstane's hall, that the following account of his appearance is given:

"He sat upright, but his head was much bent. Egil was great of face, broad of forehead, with great eye-brows; the nose not long, but marvellous thick; that place wide and long where the moustachios grow: the chin wonderfully broad, and so all about the jaw: thick-necked and great-shouldered beyond the measure of other men: hard-looking and grim-like whensoever he was wroth. He was of goodly growth and taller than any man else: his hair wolf-grey and close of growth, and become early bald" (p. 111).

Here, even in Egil's prime, there is the suggestion of some overgrowth of parts of the face, and the bent neck may be significant. In his old age, that is, between seventy and eighty, he became dull of hearing and blind. There is an episode in which, being sightless, he lies about in front of the fire in the way of the kitchen wenches; later he is warned not to put his feet too near the fire. He was, however, still sufficiently vigorous to kill with his own hands two thralls who had helped him conceal the treasure that Athelstane had given him. After his death, there was an expectation or legend that his bones were particularly long and strong, for later—that is after his bones had been moved—in the church-yard "were found men's bones. They were much greater than other men's bones: men think they know from sayings of old men that they would have been the bones of Egil. There was then Skapti Thorarinson the mass-priest, a wise man. He took up the skull of Egil and set it in the church-yard. The skull was wonderfully great; yet that seemed more beyond all likelihood, how heavy it was. The skull was all wavy-marked on the outside, like a harp-shell. Then would Skapti find out about the thickness of the skull. Took he then a hand-axe, great enough, and swung it with one hand at his hardest and smote with the hammer on the skull and would break it; but there where the blow came it whitened, but dented not nor split. And one may mark from such things, that that skull would be nought easy-scathed before the hewings of small men, while skin and flesh followed it" (p. 222).

Here then we have the skeleton of Egil with especially thick, strong bones and heavy skull with

irregular growth of bone on the surface. Two conditions immediately come to mind—acromegaly and osteitis deformans (Paget's disease). Taken alone, the description of the skull might well suggest the latter, but we may be sure that some mention would have been made of the crippling deformity of this disease had Egil suffered from it; moreover, he could scarcely have overcome his two thralls. There remains acromegaly, and here the blindness, and thickness of the skull, seem almost conclusive; indeed, as already indicated, it seems likely that even in his prime Egil had been to a slight degree acromegalic.

At this stage of my hypothesis, I went to the Royal College of Surgeons and, in Sir Arthur Keith's absence, was shown a number of acromegalic skulls by Dr. Beadles. It then appeared that acromegalic skulls could be either thick or thin, and might even be thick in some parts and not especially thick in others. No. 36.1 of the general pathological series is an acromegalic skull with a capacity of 1650 c.c., suggesting some degree of gigantism; it is not specially thick, but there is little diploe and the bone is hard. In skull 3861.1 of the special pathological series, that of a modern Roman with no history and with a normal capacity (1500 c.c.), the skull is 2 cm. thick in places; and in another skull, that of a woman (3862.1), the frontal is much thickened. Allowing for a little exaggeration, the Roman skull might, I think, well give something approaching the result obtained on Egil's skull with the hand-axe.

Now, Sir Arthur Keith quotes Prof. Hansen to the effect that several skulls from the same cemetery presented traits resembling those found in the Gardarene skull, "of a similar kind but in a lesser degree" (p. 488). There is, then, evidence of a considerable amount of pituitary disorder among a group of men living a particularly hard life, exposed on their voyages to extremes of cold, to hunger, thirst, and malnutrition, enduring hardships such as only the fittest can have survived, and I would reiterate the question with which I began this letter, but in a more definite form: Was acromegaly—a somewhat rare disease among ourselves—relatively common among the Icelandic colonists and their descendants? If so (and here I would particularly invoke the help of our Scandinavian colleagues), do the circumstances of its occurrence among these adventurous Northlanders offer any hint as to the underlying causes producing alterations in the pituitary gland?

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Court Leys, Toot Baldon,
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New Isotopes of Strontium and Barium.

APPLICATION of high resolution to accelerated anode rays has now provided improved mass-spectra of these two elements. Strontium shows a third isotope 87 in addition to those already observed. Results with barium were only obtained with great difficulty. In addition to the main line 138, they indicate the presence of no less than three of the lighter isotopes expected from the chemical atomic weight 137.36. The positions and intensities of these new lines explain the failure to observe them with the older apparatus, for with inadequate resolution their general effect would be indistinguishable from the ordinary penumbra of the strong line 138. Quantitative estimates of relative abundance will be published later. The following are the mass numbers in order of intensity:

Sr	88	86	87
Ba	138	137	136 135

It will be noticed that Sr⁸⁷ and Ba¹³⁶ form isobaric pairs with rubidium and xenon respectively.

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Cavendish Laboratory, Cambridge, July 21.