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| Base solution : | Equal volumes of absolute alcohol and distilled water, containing 1 per cent of potassium iodide as electrolyte and 0.005 per cent of gelatin as maximum suppressor. Before recording, dissolved oxygen is removed from solution by a stream of hydrogen or nitrogen. |
| Recording range : | -0.6 to -2.0 volts <i>v. sat. calomel electrode</i> . The half-wave potential is -1.35 volts <i>v. sat. calomel electrode</i> . |
| Concentration range : | 0.005 to 0.04 per cent of gamma-isomer in the base solution. |
| Galvanometer sensitivity : | 1/10 to 1/50 of full sensitivity using moderate damping. (Cambridge Instrument Co., Ltd., polarograph.) |

Calibration is carried out by subjecting known concentrations of the pure gamma-isomer to a similar procedure and plotting the resulting wave heights against gamma-isomer concentrations. A straight-line curve is obtained which, when extrapolated to zero concentration, gives a small blank corresponding to a small residual current.

Absolute alcohol has been found preferable for the preparation of solutions, as reducible impurities present in the industrial solvent are liable to cause interference.

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¹ Keller *et al.*, *Helv. Chim. Acta*, 29, 761 (1946).

² Slade, *Chem. and Ind.*, 43, 314 (1945).

Size of the Brain in the Ape-Man, *Plesianthropus*

THOUGH the brain of the young *Australopithecus* is about 500 c.c. and that of the adult perhaps 600 c.c. or more, the brain of the type *Plesianthropus* about 450 c.c., and of the beautiful female skull about 415 c.c., it has been suspected that some male brains may have been very much larger. The Kromdraai skull has a brain that we estimated may have been about 650 c.c.; but with little more than the temporal bone and the middle line as evidence the determination is not as convincing as one would like.

Recently we found an imperfect skull at Sterkfontein (skull No. 8) which has much of the top of the brain case and the nearly perfect base. Though the front of the frontal region is lost, we have part of one orbit preserved, and can restore the whole brain with considerable confidence. We give a side

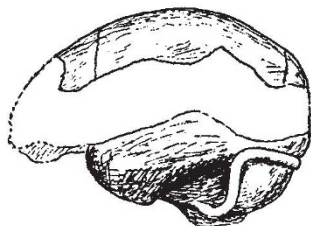


Fig. 1. RESTORED BRAIN OF *Plesianthropus transvaalensis* BROOM, SKULL NO. 8; CAPACITY, 530 C.C. 1/3 NATURAL SIZE

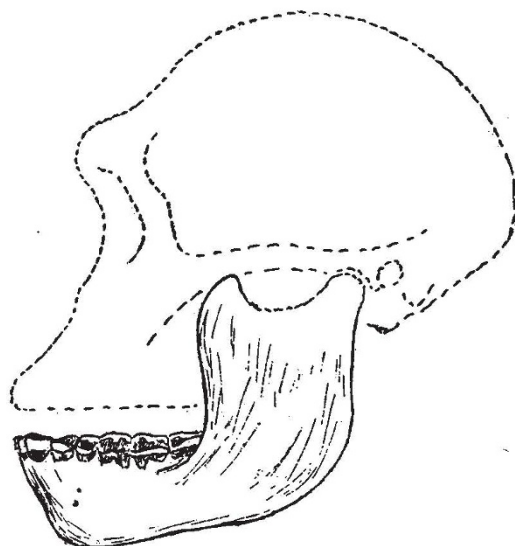


Fig. 2. SIDE VIEW OF MANDIBLE OF MALE *Plesianthropus transvaalensis* BROOM, WITH THE SKULL RESTORED IN OUTLINE. 1/3 NATURAL SIZE

view of the brain as we restore it (Fig. 1). This restoration gives us a brain of about 530 c.c.

Six months ago we discovered the very fine mandible of a large male. A preliminary account appeared in *Nature* of August 2, 1947. As the jaw is manifestly a male jaw and very much larger than must have been the jaw of the perfect female skull (No. 5), we said: "the male skull that belonged to this jaw must have had a brain of 600 c.c., or perhaps even 700 c.c.". Further development of the jaw shows that it was even larger than suspected. The right ascending ramus is nearly complete though crushed, and shows that it was broader than we had restored it. It is even broader than that of the Heidelberg jaw and much higher.

In skull No. 8, which has the 530 c.c. brain, the measurement from the base of the crown of the third upper molar to the back of the glenoid cavity is 63 mm. The skull belonging to this large mandible must have had a corresponding measurement of about 94 mm. It thus seems probable that the brain belonging to this large jaw had a capacity of well over 700 c.c. and perhaps more than 750 c.c.

From the collection of *Plesianthropus* skulls we now have, it is manifest that there is a very great degree of variation not only in size but also in structure; but as all have been found in a space of about 120 cubic yards, it seems highly probable that all belong to one species. Perhaps we may be right in assuming that the female brains vary from 400 to 600 c.c., and male brains from possibly 600 c.c. to perhaps more than 750 c.c.

We know that *Plesianthropus* had a pelvis that was essentially human, and we can be sure that it walked on its hind feet and used its hands for the manipulation of tools and weapons. If some of the males had brains of perhaps 750 c.c., we can say with confidence that, if *Plesianthropus* was not quite human, it was nearly human.

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