

VAN DIE REDAKSIE : EDITORIAL

PADVEILIGHEID

Almal is met reg bekommerd oor die groot aantal motorongelukke in ons land. Die publiek word daaglikse gemaak om veiliger te bestuur en konferensies oor padongelukke is aan die orde van die dag. Die tema by al hierdie besprekings is die onverantwoordelike optrede van ons Suid-Afrikaanse motorbestuurder, en dat dit 'n onrusbarende werklikheid is ly geen twyfel nie. Is dit egter nie tyd dat ons ook 'n slag stilstaan en seker maak of al die blaam juis reëlreg op die motoris se skouers geplaas moet word sonder dat daar 'n manende vinger na die ander belanghebbende organisasies gewys word nie? 'n Verlaging van die ongeluksyfer kan slegs bewerkstellig word as almal saam skouer aan die wiel sit en hul deel bydra om ons paaië veiliger te maak.

Op die oomblik vereis die assuransiematskappye dat bestuurders bo 'n sekere ouderdom eers 'n mediese sertifikaat moet voorlê alvorens verdere assuransie dekking verskaf word. Dit is 'n gesonde beleid, maar kan ons met sekerheid sê dat hierdie sertifikate altyd die intensiewe aandag van die dokters geniet wat hulle verdien? Wanneer 'n bekende en vertroude pasiënt hom by sy huisarts meld vir die verkryging van so 'n sertifikaat moet die geneesheer die erns van die saak nie misken nie, en moet hy met intensiewe aandag die toetse doen om homself te vergewis dat die aansoeker wel die hoë eise wat moderne motorverkeer aan hom stel die hoof kan bied. Dit is beslis nie voldoende om op grond van kennis van die pasiënt se mediese geskiedenis te aanvaar dat al sy sintuie min of meer intak is en dat hy veilig sal kan bestuur nie. Persoonlike oorwegings en bewustheid van sy familie omstandighede wat sy motorbestuur vir hom noodsaaklik maak mag geensins die dokter se oordeel beïnvloed nie. Dit maak nie

saak hoe noodsaaklik 'n motor vir 'n man se lewensomstandighede is nie; as hy nie oor bevredigende refleksie, gesigskerpte en dies meer beskik nie mag hy nie agter die stuur van 'n motor wees nie.

Dit is hoog tyd dat die owerhede ernstige oorweging skenk aan wetgewing om gereelde mediese ondersoeke van alle motorbestuurders verpligtend te maak, en dan moet ons, die geneesheer, ons deel bydra om te verseker dat sodanige wetgewing nie in 'n klug ontaard nie. Die verkryging van 'n mediese sertifikaat vir 'n lisensie moet nooit 'n blote formaliteit wees wat feitlik telefonies afgehandel kan word nie. Medelye met 'n pasiënt wat sy motor as broodwinner nodig het gaan nie die kind wat hy doodry weer lewendig maak nie; as hy nie fisies in staat is om met veiligheid te bestuur nie mag hy geen mediese sertifikaat ontvang nie, ongeag sy omstandighede.

Nuusberigte oor die merkwaardige prestasies van sekere liggaamlik gestremdes wat met spesiaal-toegeruste motors daarin slaag om ten spyte van hul gebreke nog te bestuur is wel interessant, maar word daar intensief seker gemaak dat sulke persone tog wel aan die eise van moderne winnige verkeer kan voldoen? Wie kontroleer hierdie dinge?

Op 'n heel ander vlak behoort daar ook aandag gegee te word aan die sielkundige uitwerking op die gemiddelde bestuurder van onsinnige padreëls wat so dikwels deur onnadenkende owerhede opgestel word. Watter effek het 'n spoedteken wat sê 15 m.p.u. op plekke waar daar kamtig aan die pad gewerk word, maar waar daar in werklikheid slegs een of twee gruishopies op die berm lê op die gemoed van die motoris—sal dit hom nie straks beïnvloed om verdere padtekens as ewe sinneloos te ignoreer nie?

ZINJANTHROPUS: AN EAST AFRICAN APE-MAN

Any new book on human origins in Africa is likely to be of special interest in South Africa, as the Republic is well known throughout the world for her fossil ape-men or australopithecines: near relatives of Man who lived here a million and more years ago. Their remains have come from limestone caves in the Cape and Transvaal, from sites like Taung, Sterkfontein, Swartkrans and Makapansgat, whose names are household words in physical anthropology. On the basis of these South African fossils it became apparent, through the pioneering work of two South African medical men, that australopithecines fell into two groups: small gracile ones, named *Australopithecus* by Prof. Raymond Dart in 1925, and larger robust ape-men first described by Dr Robert Broom as *Paranthropus* in 1937. Both types are now well known, and, in fact, remains of more than 50 *Paranthropus* individuals have

come from Swartkrans alone.

In recent years australopithecine fossils, morphologically similar to the South African ones, have also been discovered in East Africa. One of these came to light on 17 July 1959, when a remarkable skull was unearthed close to the bottom of Olduvai Gorge in Tanzania by Dr Mary Leakey. It lay in numerous pieces, preserved in an old lake deposit of bentonitic clay but, when assembled, was found to be remarkably complete. Its maxillary dentition was intact, though the skull lacked a mandible. Less than a month later Dr Louis Leakey brought the specimen to South Africa, for comparison with the existing collections in Johannesburg and Pretoria. It was immediately apparent that the skull belonged to an australopithecine closely related to *Paranthropus*, and in *Nature* of 15 August 1959 Leakey¹ described it as a new genus and species, *Zinjan-*

thropus boisei ('Zinj', an old name for East Africa; 'boisei' in honour of Mr Charles Boise, financial sponsor of the excavations). The skull came from a young male, but was more massive than any of the *Paranthropus* specimens from South Africa.

Shortly afterwards, the fossil was entrusted to Prof. P. V. Tobias, of Johannesburg, for detailed anatomical description. A remarkable monograph has resulted:

Olduvai Gorge, Volume 2: The cranium and maxillary dentition of Australopithecus (Zinjanthropus) boisei. By P. V. Tobias, edited by L. S. B. Leakey. Pp. xvi + 264. 42 plates. £4.10.0. London: Cambridge University Press. 1967.

In his foreword to this book, Sir Wilfred le Gros Clark points out that the *Zinjanthropus* skull is specially important for two reasons: it can be dated and is unusually complete and free from distortion. He goes on to write: 'I do not suppose that any such meticulous and exhaustive description of a fossil hominid skull as is to be found in this monograph has ever before been made, even if account is taken of Boule's description of the *Chapelle-aux-Saints* skull, or of Weidenreich's account of the crania of Chinese representatives of *Homo erectus*'. The book consists of 20 chapters, the 2 introductory ones being followed by 16 dealing with detailed anatomical description. Then follows a chapter in which all the cranial and dental features of the skull are summarized. The monograph closes with a discussion on the taxonomic, cultural and phylogenetic status of *Zinjanthropus* and of the australopithecines in general.

As is to be expected, the fact emerges clearly that *Zinjanthropus* and *Paranthropus* are basically similar, representing a lineage of robust australopithecines separated from the main stream of human evolution. One of the great advantages of the Olduvai site is that the fossil-bearing clays are frequently interbedded with lavas, whose age can be determined radiometrically. Using the potassium/argon method, Leakey *et al.*² have shown that the *Zinjanthropus* skull is approximately one and three quarter million years old. Evidence is accumulating that this ape-man line was a remarkably stable one, undergoing little morphological change over a vast span of time. *Zinjanthropus* lived at Olduvai perhaps a million years before *Paranthropus* did so at Swartkrans, yet the differences between these forms do not reflect any major evolutionary trend. Such evidence suggests that, while our own ancestors were evolving rapidly in the direction of *Homo*, the robust australopithecines were contentedly pursuing an unchanging way of life to which they were clearly well-adapted.

For many years Prof. J. T. Robinson (previously of the Transvaal Museum) has argued that there was, in fact, a fundamental phylogenetic difference between the robust and the gracile australopithecines. He believes them to represent separate lineages which sprang from a common ancestor at some remote time in the Pliocene; that *Paranthropus* was a comparatively specialized vegetarian, while *Australopithecus*, being very much closer to *Homo*, had avoided specialization to become a generalized omnivore. One of the lines of evidence which led Robinson³⁻⁵ to believe that *Paranthropus* was essentially vegetarian lay in the nature of its dentition, characterized by exceptionally large premolars and molars but disproportionately

small canines and incisors. Proportions found in *Australopithecus* approximate more closely to those of *Man*.

Robinson's dietary hypothesis is rejected by Tobias in his book on *Zinjanthropus*, as is any generic separation between the lineages. He regards all the specimens as *Australopithecus* and writes (p. 228), 'With the attenuation and, indeed, collapse of the dietary hypothesis, it would seem that the main prop for the generic distinctness of the two taxa falls away too'.

In a recent review, however, Robinson⁶ remains unimpressed by Tobias's counter-arguments, in which the dietary differences were rejected largely on the basis of his metrical comparisons between individual teeth from the two kinds of australopithecine. Robinson maintains that such comparisons are not meaningful in this context and that questions of proportion between anterior and posterior teeth within the same dentitions should rather be studied. When such proportions are considered, Tobias's view (stated on p. 226 of his book) is not very different from that of Robinson: 'It may be concluded that there is a real difference between the two taxa in the disparity between the sizes of the canines and the cheek-teeth'. Clearly the many and fundamental differences in interpretation expressed by these two prominent authorities on the australopithecines, spring from differing degrees of emphasis placed on crucial anatomical characters.

In the last chapter of his book, Tobias discusses the cultural activities of early hominids. When discovered, the skull of *Zinjanthropus* was associated with primitive stone tools of the Oldowan culture. This association led Leakey to believe that *Zinjanthropus* was, in fact, the oldest known tool-maker—a claim which was received in South Africa with caution. As long ago as 1951, Broom and Robinson⁷ had demonstrated the coexistence of *Paranthropus* with a primitive true man at Swartkrans and it had become customary to attribute stone cultural activity to the more advanced form. It therefore came as no great surprise when Leakey⁸ announced the discovery of primitive human remains (later referred to as *Homo habilis*), from the same living floor which had yielded *Zinjanthropus*. This contemporaneity led Tobias to conclude that, as was the case with *Paranthropus* at Swartkrans, *Zinjanthropus* was also unlikely to have made the stone implements.

The discovery of the Olduvai skull and the meticulous scrutiny to which it has been subjected by Tobias, have added vastly to our knowledge of African australopithecines. Elwyn Simons⁹ has recently commented that Tobias's book leaves us with more new problems than we had before. The uncovering of fresh and significant problems is the inevitable and exciting by-product of scientific progress: the fact that Tobias's study leaves us with so many new and impelling questions is an indication of the contribution it has made to the study of human origins.

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2. Leakey, L. S. B., Evernden, J. F. and Curtis, G. H. (1961): *Ibid.*, **191**, 478.
3. Robinson, J. T. (1956): *The Dentition of the Australopithecinae*. Transvaal Museum Memoirs No. 9. Pretoria: Transvaal Museum.
4. *Idem* (1960): *Nature (Lond.)*, **186**, 456.
5. *Idem* in Howell, F. C. and Bourlière, F., eds. (1963): *African Ecology and Human Evolution*, pp. 385-416. London: Methuen.
6. *Idem* (1968): *Nature (Lond.)*, **219**, 981.
7. Broom, R. and Robinson, J. T. (1950): *Amer. J. Phys. Anthropol.*, n.s., **8**, 151.
8. Leakey, L. S. B. (1961): *Nature (Lond.)*, **189**, 649.
9. Simons, E. L. (1968): *Science*, **160**, 672.