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PILTDOWN ECHOES AGAIN

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(Editor's note: A BBC Series "Scientifically Cheating", broadcast in New Zealand last May, featured "The Strange Case of the Piltdown Skull". There was no mention that many years before the 1953 exposure of the Piltdown hoax a New Zealand dentist presented evidence, at the Auckland Science Congress of ANZAAS, which proved that Piltdown Man never existed. Dr Taylor has been invited to supply details of his 1937 rejection of Sir Arthur Smith Woodward's 'Restoration' of the Piltdown skull.)

In his book The First New Zealanders, Philip Houghton discusses the dating of bones from archaeological sites and shows how certain tests enabled scientists to confirm the fraud of the association of fragments as 'Piltdown Man'. He writes, "There were always sceptics, such as the great biologist Weidenreich, or the New Zealand dentist and anthropologist R.M.S. Taylor who pointed out that the wear on the teeth could not be natural and that the canine was misidentified. Such news from the colonies was very bad, and ignored" (Houghton,1980:22).

Although casts of the Piltdown restorations have long since been removed from museum showcases, the Piltdown concept stimulated research in many fields, and scientists produced sound evidence for rejection of Piltdown long before the dramatic climax published in 1953. Thus it happens that 'post-mortems' still appear in the press and in scientific literature (see, for example, "News and Comment" in Science, 8 December 1978, p.1062). As one who showed in 1937 why the Piltdown concept must be rejected, it is relevant to review the nature and strength of that demonstration, and perhaps modify the charge that "such news from the colonieswas ignored" as Houghton naively comments.

The paper was presented at the Auckland ANZAAS Congress to a joint meeting of the sections on Medical Science and Anthropology (Taylor, 1937). Previous workers had expressed their opinions that the jaw and skull fragments did not belong, and that the canine fragment was an upper tooth, but that such beliefs "could only remain a matter of opinion". But now (1937) for the first time there was positive proof presented that the fragments could not belong together and that the concept presented in the restoration could not have existed in life.

From original studies in dental morphology, in occlusion and in tooth wear it was shown in the 1937 paper that:-

1. The canine fragment was proved to be an upper left tooth, and could not be a lower. It was placed as a lower in the restoration.
2. The restored upper canine was unlike any known tooth and was indeed anomalous.
3. The restored canine occlusion could never have existed in life, for the relationship would have been traumatic.
4. Therefore, the pattern of wear given to the restored canines could not have taken place.
5. Wear given to the restored canines and in the canine fragment was incompatible with wear on the molar teeth in the mandibular fragment, and therefore these lower teeth could not have belonged with the canine fragment.
6. Since it was impossible for both the jaw fragment and the canine fragment to have existed in the same creature, the concept of Piltdown Man, as in the Smith Woodward Restoration, must be rejected.
7. It was further demonstrated that Smith Woodward's statements were not supported by his illustrations of canine occlusion "in the true ape fashion".

It was shown that wear on the Piltdown canine fragment resembled that found on some modern upper teeth where there was a deep overbite, or an increased inclination of tooth axes and that severe wear in primitive groups was usually of the 'edge-to-edge' pattern. It was also shown in the same paper that occlusal relationships and morphological differences between upper and lower anterior teeth would 'automatically' produce an edge-to-edge bite as wear proceeded. To the present day it seems that dental anthropologists continue to suggest that some adjustment in jaw relationships, or in the dentition, is necessary to produce the edge-to-edge bite, but in fact there is no mystery nor need to postulate such adjustment.

Historical note concerning the 1937 Piltdown paper

Intensive study of dental morphology had enabled the Piltdown rejection to be made on the grounds of morphology alone, using casts of the fragments and of the restoration. It was desired to emphasise the rejection by study of the actual fragments, and of the tooth wear surfaces under low power magnification seeking scratches. Therefore the writer did not seek immediate publication of the paper. In 1937 however, the world recession frustrated a young man's efforts to obtain assistance for travel to Britain for research purposes, and then World War II soon destroyed hopes of travel or of publication. Post-war circumstances offered no prospect of reviving the proposed further study overseas, and the project lapsed. But after some sixteen years other workers with new sophisticated tests dramatically exposed the Piltdown hoax.

Since the 1937 paper was the writer's first public presentation of studies in dental morphology which were subsequently greatly extended, the most relevant portion of the Piltdown paper was published, with figures, as an appendix in his recent book (Taylor, 1978). It might be noted that although the paper was not published in the traditional manner, its presentation at the Congress of an international association of scientists was recorded in the report of that congress. Moreover it is known that British scientists attended the presentation. And further, two full copies of the paper were sent to London and seen not only by the Dental Committee of the Medical Research Council in 1937 but also by several scientists in London and Edinburgh whose names are known. If, therefore, Houghton's comment is both apt, and justified, other scientists might yet acknowledge the importance of the early contribution from dental science in New Zealand in solving the enigma and so rejecting the concept of Piltdown Man as portrayed in the Smith Woodward restoration.

References

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