



Figure 1 Origin of our species. The figure shows the geographical and temporal distribution of hominid populations, based on fossil finds, using different taxonomic schemes. The new finds from Herto^{4,5} (H) represent early *Homo sapiens*. **a**, This reflects the view that both Neanderthals and modern humans derived from a widespread ancestral species called *H. heidelbergensis*². **b**, However, evidence is growing that Neanderthal features have deep roots in Europe^{2,8}, so *H. neanderthalensis* might extend back over 400,000 years. The roots of *H. sapiens* might be similarly deep in Africa, but this figure represents the alternative view that the ancestor was a separate African species called *H. rhodesiensis*. Different views of early human evolution are also shown. Some workers prefer to lump the earlier records together and recognize only one widespread species, *H. erectus*² (shown in **a**). Others recognize several species, with *H. ergaster* and *H. antecessor* (or *H. mauritanicus*) in the West, and *H. erectus* only in the Far East⁸ (shown in **b**). Adapted with permission from refs 8, 11.

characteristics, such as its globular braincase, are typically modern. In the angulation and transverse ridge of the occipital, there is also an intriguing resemblance to fossils from sites such as Elandsfontein (South Africa) and Broken Hill (Zambia) that are often assigned to *H. heidelbergensis* or *H. rhodesiensis*. This may provide a clue to the individual's ancestors (Fig. 1). But overall, the fossil seems closest in morphology to particular crania from Jebel Irhoud, Omo Kibish and Qafzeh.

So White and colleagues' findings^{4,5} provide a plausible link back to more ancient African fossils, and forward to Levantine samples. They also raise questions about the overall pattern of modern human origins in Africa. Because of Africa's great area and still limited fossil record, it is uncertain whether the pattern of *H. sapiens* evolution there was essentially continent-wide, or was a more localized — and perhaps punctuational — process. The Herto finds shift the focus once again to East Africa. It seems from these crania and from possibly contemporaneous fossils, such as those at Ngaloba, Singa and Eliye Springs, that human populations of this era showed a great deal of anatomical variation. So, did the early modern morphology spread outwards from East Africa, perhaps gradually

more archaic forms? Or could there have been an African version of multiregionalism, with modern morphology coalescing from various populations across the continent^{2,7,8}? Only better samples and better dating of the African fossil record will help resolve these questions.

And what of the taxonomic status of the new finds? White and colleagues propose that, although measurements of the most complete fossil differentiate it from geologically 'recent' (that is, post-Pleistocene) *H. sapiens*, there is sufficient evidence to assign the material to this species overall, while naming a new subspecies, *idaltu*. However, in my opinion, the distinctive features described for *H. sapiens idaltu* might not be so unusual, and could probably be found in late Pleistocene samples from regions such as Australasia⁹.

Do the Herto fossils represent 'modern' *H. sapiens*? There is an ongoing debate about the concept of modernity, in terms of both morphological and behavioural characteristics^{2,3,7,8,10}. Nevertheless, despite the presence of some primitive features, there seems to be enough morphological evidence to regard the Herto material as the oldest definite record of what we currently think of as modern *H. sapiens*. The fact that the geological age of these fossils is close to some estimates



100 YEARS AGO

It is reported that a young Austrian doctor named Sachs has fallen a victim to his scientific zeal having accidentally inoculated himself with plague, from the effects of which he died after a short illness. Such regrettable incidents will occur while scientific research is pursued, and cannot be avoided even by the greatest foresight. There is no likelihood that other cases will develop, as under good hygienic conditions plague is not particularly infectious from man to man, and European doctors and nurses tending the sick seldom contract the disease.

ALSO...

In the course of a recent article published in the *Recueil de l'Institut botanique de Bruxelles*, Prof. Errera comes to the conclusion that it is not possible for organisms to exist of a size very appreciably smaller than those which can be observed with the highest powers of the microscope now in use. An estimation is made of the number of molecules of certain bodies, such as albuminoids, which are present in a bacterium of given size: the number is of such an order of magnitude that only a few molecules could be present in an organism having a diameter 0.01μ , and thus a minimum limit to the possible size is obtained.

From *Nature* 11 June 1903.

50 YEARS AGO

Meeting on "Preservation of Normal Tissues for Transplantation". In opening the scientific proceedings, Prof. P. B. Medawar (University College London) said that living skin, when transplanted into positions formerly occupied by skin, was probably the most exacting of all tissues... Under the heading [of modifying host reactions] Prof. Medawar outlined experiments done in collaboration with R. E. Billingham and L. Brent which showed that if an animal were presented with living foreign cells in foetal life, its power to react against those cells in later life was reduced or wholly abolished. This was not due, as had been widely assumed, to an adaptation of the grafted cells, but to an adaptation of the host, for 'actively acquired tolerance', once established by inoculation of the foetus, extended to cells freshly transplanted in later life — cells which therefore had had no opportunity to adapt themselves to alien soil.

From *Nature* 13 June 1953.