

two taxa, that "gulf" must be approximately similar in magnitude to present differences between chimpanzees and hunter-gatherers. Primatologists (and one sees it frequently in these two volumes) often adopt an attitude that human behaviour is little more than slightly elaborated chimpanzee (or other primate) behaviour; ethnographers can, to the contrary, take the view that australopithecines were hunter-gatherers with robust faces and walnut-sized brains. Both groups would do well to study with great care the contributions to *Omnivorous Primates* by Freeman and Klein. These authors carefully document and chronicle the dramatic and progressive development of dietary shifts which took place in the middle and late Pleistocene in the Iberian Peninsula and the circumcoastal region of South Africa. While the question of the actual origin of hominids is critical and intriguing, the transformation of a

chimpanzee-like bipedal hominid into a cognitive, social and technological animal took place during the middle Pleistocene, a period for which no living analogues exist. There has been an overall assumption that *Homo erectus* was simply an intermediate between australopithecine and human being, but the archaeological evidence does much to contradict such an assumption. All living societies, no matter how "primitive", post-date the dramatic advances in upper Palaeolithic technology and the unquestionably equally dramatic alterations in social and subsistence behaviour which accompanied them. It is clear that we will lack a complete understanding of the process of human evolution until this vast yet crucial middle period is given the detailed attention it most sorely deserves. □

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certain words, for example "the" 10,144 times, "of" 7265, "in" 3904, "to" 3563; "you" which occurred three times was also suppressed.

To my amazement, Darwin did not include a single mention of the aardvark, and zoological appeared only twice with single entries for zoologist and zoologists. Geological, geologists and geology together merited 128 entries, thus emphasizing the relative importance of these two disciplines in Darwin's eyes. Even the creationists are well catered for in that they can readily list the number of qualifying prepositions, nouns, adverbs and adjectives used. Insights into Darwin's relationship with other scientists of the period can also be extracted from this work. Charles Lyell is mentioned 27 times in such phrases as "Lyell's noble views", "Lyell's grand work", "Lyell's profound remark", "Lyell's manual will bring home the truth". Huxley rates a mere 4 mentions, Murchison 4, Adam Sedgwick 2, whereas Owen and Agassiz with 18 and 10 respectively do much better.

The use of certain words must surely be significant: for example Darwin uses the first person singular some 999 times. And although Darwin's theory arose primarily from his circumnavigation of the world aboard the H.M.S. Beagle, this vessel is mentioned but twice, firstly in the opening sentence of the book: "When on board H.M.S. Beagle, as naturalist, I was much struck by certain" (there the entry ends). The other word that is remarkable for the circumspection with which it was used by Darwin is the last word in the book: "and most wonderful have been, and are being, evolved".

There is one further criticism that can be levelled at this volume: at no place is it possible to discover the full title of Darwin's book. Once again it is necessary to refer to the Harvard facsimile: *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. □

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Anatomy of the *Origin of Species*

L. Beverly Halstead

A Concordance to Darwin's Origin of Species, 1st Edn. Edited by Paul H. Barrett, Donald J. Weinschank and Timothy T. Gottleber. Pp.834. ISBN 0-8014-1319-2. (Cornell University Press: 1982.) \$38.50, £27.

How appropriate it is, in the year marking one hundred years since Darwin's death, that his best-known book should join that other great British institution the "Complete Works of William Shakespeare" to say nothing of the Bible. All students of evolution and Charles Darwin will be indebted to Cornell University Press for their concordance to the *Origin of Species*, first edition.

This concordance is perhaps the supreme monument to what a computer can do with a book and also to what university teachers can accomplish with the help of undergraduates — who, in this case, patiently

typed 834 pages of text at 86 lines to a page. Unlike the concordance to the Bible, where the full context is listed under each entry and one can obtain all the useful quotations without ever having to open the Bible itself, with the present work such an approach is not possible. Each entry listed is printed in the centre of the page with sufficient of the adjacent words to fill a single line of print, no more and no less. This means that the entries rarely make up a complete sentence, and if they are at the end of a sentence the following quotation may well be entirely irrelevant to the entry. Reference to the first edition itself, or rather a facsimile, is thus essential. The publishers of the facsimile, Harvard University Press, should be duly grateful.

Every student of evolution will wish to possess this concordance, but it must be stressed that for all its thoroughness the three editors found it necessary to suppress

0411 groups under groups. This classification is EVIDENTLY not arbitrary like the grouping of the star
0201 a fair balance be struck between the good and EVIL caused by each part, each will be found on the
0490 and most wonderful have been, and are being, EVOLVED.
0009 nts have pollen utterly worthless, in the same EXACT condition as in the most sterile hybrids. We
0032 fs that this is not so in some cases, in which EXACT records have been kept; thus, to give a very

... the final word from Darwin.

0297 heir specesi and they do this the more readily IF the specimens come from different sub stages of
0297 which on my theory we ought to find. Moreover, IF we look to rather wider intervals, namely, to d
0300 gions of the whole world in organic beings; yet IF all the species were to be collected which ever
0301 nal gradations between any two or more species. IF such gradations were not fully preserved, trans
0301 enerally be local or confined to one place, but IF possessed of any decided advantage, or when fur
0301 logists, he ranked as new and distinct species. IF then, there be some degree of truth in these re
0301 eri and these links, let them be ever so close. IF found in different stages of the same formation
0302 to the belief in the transmutation of species. IF numerous species, belonging to the same genera
0303 uceeding formation such species will appear as IF suddenly created. I may here recall a remark fo
0304 lf extracted from the chalk of Belgium. And, as IF to make the case as striking as possible, this
0305 north as they are at present. Even at this day, IF the Malay Archipelago were converted into land,
0307 acts in any degree intermediate between them. IF moreover, they had been the progenitors of the
0307 umerous and improved descendants. Consequently, IF my theory be true, it is indisputable that befo
0307 lated before the Silurian epoch, is very great. IF these most ancient beds had been wholly worn aw
0309 nternerved during these enormously long periods. IF then we may infer anything from these facts, we
0309 nd. Nor should we be justified in assuming that IF for instance, the bed of the Pacific Ocean were
0312 cent beds, though undoubtedly of high anticliffity IF measured by years, only one or two species are
0312 r, as far as we know, on the face of the earth. IF we may trust the observations of Philippi in Si
0313 seldom changed in exactly the same degree. Yet IF we compare any but the most closely related for

... if a picture paints a thousand words . . . , or here 19 examples of the 415 times "if" was used in the *Origin*.

Page ***** (Key Word) *****