

PART C. CHARACTERISTICS OF THE HOSTS OF OESTRIDAE

Once a tentative phylogeny for the Oestridae has been established, it now becomes necessary to understand why only a few mammals serve as their hosts. This is the problem discussed in this section.

For the history of mammals and their classification I have used as bases the works of SIMPSON (1945), ROMER (1967), the treaty of palaeontology of PIVETEAU (1958, 1961), and especially WALKER *et al.* (1964); more specific papers are cited in the text.

It is a well known fact that the classification and zoogeography of mammals is very tentative and hampered by three factors in a special way: 1. The lack of a good phylogenetic analysis and therefore of a sounder basis for the establishment of a plausible zoogeography. As remarked by CRACRAFT (1973: 489): 'The study of historical zoogeography includes the construction of hypotheses about (1) phylogenetic (cladistic) relationships, (2) the probable distribution of ancestral species, and (3) the probable pathways of dispersal and those paleogeographic and paleoclimatological factors that influenced this dispersal. I consider the inclusion of knowledge of phylogenetic relationships within the realm of historical biogeography because "a biogeographic analysis implies, logically follows from, and at best can be no more reliable than, a prior phyletic analysis" (NELSON, 1969: 246). Once relationships have been postulated, then hypotheses about centers of origin and dispersal routes take on maximum precision.'

2. The lack of attempts at explaining the distribution of certain groups by continental drift (following, of course, a phylogenetic analysis of these groups). Matthewsonianism was responsible for a widely accepted idea—that almost all groups of mammals spread from the northern continents to the southern ones; alternative hypotheses were not even attempted, or entirely discarded. COOKE (1972: 89-90) commented: 'The presence of fossil mammals of Ethiopian type in Eurasia and their subsequent extinction there have also led to the widespread belief that Africa possesses its present character primarily because it has served as a "refuge" for the survival of archaic forms of life. W. D. MATTHEWS' classic study, "*Climate and Evolution*" (1915), did much to foster a vision of Asia as the major center from which the various groups dispersed, and the views of such workers as PILGRIM (1941) in favor of Africa as an important evolutionary center and a source for

diffusion *into* the Palearctic region have received scant approval or acceptance. Further paleontological discoveries [and a phylogenetic analysis] are needed before the extent of the interchanges between the Palearctic and Ethiopian regions can be fully evaluated, but in the last few years new evidence has accumulated which emphasizes the essentially indigenous nature of much of the living and extinct African mammalian fauna.' 3. The exaggerated stress laid upon 'centres of origin'. For a discussion of this problem, see CROIZAT, NELSON & ROSEN (1974).

Therefore, some of the conclusions reached here will necessarily be somewhat speculative, as a reformulation of the classification and zoogeography of mammals remains a task for the future.

Tables showing dimensions and weights of mammals were compiled from the data furnished by WALKER *et al.* (1964). Time-ranges for the several groups of mammals were extracted from ROMER (1967), but some genera were not included in the subfamilies and tribes, when not cited in SIMPSON (1945) and PIVETEAU (1958, 1961).

Abbreviations used in the illustrations (and sometimes in the text) are the following:

Af	Africa	Mad	Madagascar
As	Asia	Med	Mediterranean
Aus	Australia	NA	North America
CA	Central America	NAf	North Africa
CAs	Central Asia	NAs	North Asia
EAF	East Africa	NZ	New Zealand
EAs	East Asia	SA	South America
EEu	East Europe	SAf	South Africa
EInd	East Indies	SWAs	Southwest Asia
Eu	Europe	WAF	West Africa
Gr	Greenland	WInd	West Indies
Ind	India	WNA	Western North America

The name of a genus followed by an asterisk (*) indicates that members of that genus are parasitized; the generic name in parentheses and with an asterisk indicates that parasitism is accidental, and that the larva does not complete development in that host.

The somewhat lengthy discussion of the classification and palaeontology of some groups of mammals, apparently of little significance for this section, seems desirable for two reasons: 1. To provide general information about mammals for dipterists not conversant with this class; 2. To provide bases for the more detailed discussion about the history of mammalian groups and their relations with Oestridae, which will be presented in Part D.