

Phthiriasis in the Primates: a Sidelight on Phylogeny.

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THE lice of warm-blooded animals belong to two great groups: the Mallophaga, or biting lice, which occur on both birds and mammals, though they are dominant on birds, and the Siphunculata, or sucking lice, which are confined to the mammalia.

Kellogg concluded, from a study of the Mallophaga of birds, that the distribution of closely allied species of these parasites was racial (i.e., followed given races of host) rather than geographical. So that, for example, the biting louse on a woodpecker in Borneo would be more likely to be found again on a woodpecker in Texas than upon a parrot in the self-same tree. Conversely, a study of these parasites may throw additional light upon questions of phylogeny. Thus, from an examination of their parasites, it can be shown, for example, that the gulls are allied to the plovers, that the cormorant is first cousin to the solan goose, and that the flamingo is related to the ducks.



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The sucking lice of mammals tell us the same story: though the mammals are not nearly so rich in parasites as are the birds, and the story is less complete. The Siphunculata consist of three families. First: the *Hæmatomyzidæ*, which contain but one genus and species, *Hæmatomyzus elephantis*. The structure of this genus is very aberrant and the single species occurs on the elephant in Africa, India and Malaya. Second: the *Hæmatopinidæ*, which contain the great majority of the sucking lice of mammals. *Hæmatopinus suis*, a denizen of the domestic pig all over the world, is an example. Third: the *Pediculidæ*, which occur only on monkeys, apes and man. With certain minor exceptions all the lice of the Old World monkeys (*Cercopithecidæ*) belong to the genus *Pedicinus*, and this genus is limited to that family. The familiar *Pediculus* occurs upon all races of man, on the two species of gibbon of Borneo and Sumatra and on the chimpanzee. With one exception it is confined to man and the anthropoid apes. The exception is the spider monkey (*Ateles*) of South America; this exception constitutes one of the most interesting features of the story. It has been shown by Friedenthal that both the blood and the hair of the spider monkey present characters which approximate more closely to those of the anthropoid apes and man than is generally the case with the lower monkeys, and it appears probable that—perhaps in virtue of this fact—*Pediculus* crossed over from an anthropoid host to the ancestor of the modern *Ateles*. If such a cross-over occurred, it must have been at some very remote period, for both *Ateles* and the *Pediculus* it carries have split up into a number of distinct species. Finally, the crab louse (*Phthirus*) is a genus of *Pediculidæ* which has long been regarded as peculiar to man; recently, however, a new species (*Phthirus gorillæ*) has been described by Ewing from a gorilla from the Belgian Congo. One must conclude, therefore, in so far as one can make any deductions from so small a quantity of fact, that man is more closely related to the anthropoid apes than these are to the lower families of monkeys.