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Science: Niche for the Colonel

The British Museum of Natural History was in grateful receipt last week of a strange new gift—500,000 Mallophaga, the world's leading collection of bird lice.

The donor of the collection is 73-year-old Colonel Richard Meinertzhagen, D.S.O., late of the Duke of Cornwall's Light Infantry, who first took up his odd pursuit in 1928, after more than 25 years spent in fighting the Empire's battles, from skirmishes in India to the trenches of World War I. Instead of retiring to his London town house, which bristles with lion and panther heads, he teamed up with his young cousin, Zoologist Theresa Clay, and mounted an offensive against the Mallophaga. He and Theresa believe that the lice can be used as a small-scale model of animal evolution.

The Best Muslin. Over the years, the colonel and his cousin have scoured the world for bird lice, visiting Syria, Africa, India, Arctic Russia, Estonia, Afghanistan, Arabia and Arizona. As soon as pack horses or native bearers arrive with the expedition at the hunting grounds, the colonel strolls out with his shotgun. As each bird bites the dust, he wraps it carefully in many folds of "the best butter muslin." When the bird's body begins to cool, the lice desert it for the muslin. Then the colonel and Theresa unwrap the muslin and shelter the displaced lice in labeled vials of alcohol.

Mallophaga are not beautiful. Many are pinhead size; the largest are only about one-quarter-inch long. But they have exploited their universe, the feathered outsides of birds, with commendable perseverance.

The Clever Guests. When the first birds appeared some 130 million years ago, say the colonel and Zoologist Clay, they offered an "unoccupied ecological niche": i.e., a place where some organism might manage to scratch out a living. Almost at once an ancient louse moved in, finding the feathers and skin debris a convenient source of food. As the early birds evolved into separate species, their lice evolved too, adapting themselves cleverly to each change in their hosts. Penguins have their lice; so do skylarks and ostriches. The extinct dodo and giant moa were undoubtedly lousy, too.

Lice, therefore, are often an indication of relationship between species. Often two kinds of birds that look very different to man appear much the same from a louse's point of view. If the birds are infested by similar lice, there is a good chance that they descended from a common ancestor. Certain lice carried by flamingos, for instance, indicate that flamingos are related to ducks and not related to storks. There is not much chance that flamingos recently picked up duck lice. Lice are timid pioneers, and only rarely colonize

unfamiliar birds.

The Travelers. About 4,000 species of Mallophaga are already known—far more than are needed to fit all the special niches. So, many of the species must have been formed by such evolutionary forces as change of environment. Because each kind of louse is limited to certain birds, it is easy for groups of lice to get out of touch with the main body of their kind. When birds cross a natural barrier, such as a desert or mountain range, the lice they carry become like animals living on an island. They often change in the course of time, as island animals do.

Their reproductive organs, for instance, are extremely "plastic." Some male lice have their genital openings in their backs; others have them underneath. Some depend on strong antennae for clasping the females. The females also vary, and even a short period of isolation may bring significant changes. Such drifting apart, say the colonel and Theresa, has often created new species of lice.

The colonel and Theresa believe that their own ecological niche, the Mallophaga, contains enough scientific nourishment to support them indefinitely. This year they plan to visit India and Assam. Many new lice are awaiting them there, though political instability, as the colonel remarks regretfully, makes it more difficult for them to reach the lousy birds.

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