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A SMALL FORM OF ORNITHODOROS (ALECTOROBIUS) CONICEPS
(CANESTRINI, 1890) (IXODOIDEA, ARGASIDAE)
FROM INDIA AND U.S.S.R.
WITH WILD BIRDS AS HOSTS IN INDIA

BY

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Recently, Professor R. L. Usinger presented us with a collection of three males, one female, and three nymphal ticks that he had taken from swallow nests on buildings at Agra, India, on 22 August 1959. Apparently identical with Ornithodoros (Alectorobius) coniceps (Canestrini, 1890), these parasites are exceptionally interesting. Agra is some 2000 miles east of all other localities from which this species has been reported and the individual size of specimens in this sample is distinctly smaller than is that of populations in Europe, North Africa, and the Near East. The Indian collection is one of the very few of this “domesticated species” of tick ever taken in association with wild rather than domestic birds.

Agra swallows, according to Dr. Salim Ali (personal correspondence), may be Hirundo concolor, H. erythropygia, or H. filifera smithi.

Previously reported areas in which O. coniceps has been collected (reviewed by Hoogstraal, 1956, p. 115) are France, Italy, Spain, Morocco, Tunisia, Palestine, Jordan, and shores of the Aral Sea in U.S.S.R. This tick also occurs in the Sir-Dariansky area of U.S.S.R. and in eastern Armenia (Pospelova-Shtrom, 1953). The Usinger material from India, therefore, represents a very considerable extension of the known range of coniceps.

Most earlier reports associated coniceps with domestic pigeons and chickens and mentioned that man suffered severely when bitten. Colas-Belcour (1929)

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reared an adult of this species from a larva which he collected from the wing membrane of a bat, *Pipistrellus kuhlii* Naterrer in Kuhl, in Tunisia. This chiropteran host, a well-known inhabitant of human structures, probably had been resting in the vicinity of domestic fowl. The Indian specimens appear to represent the first data for *coniceps* in association with wild land birds. Further search of these and similar nests in the Mediterranean area and southern Asia is likely to provide additional evidence for wild hosts and distribution of this parasite. Migrating birds or bats may have been responsible for establishment of a *coniceps* population in Agra. This question may be reconsidered after more knowledge of *coniceps* distribution has been obtained.

European, African, and Near Eastern (Palestine) females previously reported measure approximately 7.0 mm. in length and 5.0 mm. in width. In our collection from Palestine, most females are approximately 7.35 mm. in length and 4.15 mm. in width. One exceptional female is much smaller: 3.95 mm. by 2.23 mm. Males in the Palestinian collection measure from 4.98 mm. to 5.81 mm. in length and 3.02 mm. to 3.32 mm. in width.

PospeLOVA-SHTROM (1953) reports Armenian females of this species as 5.7 mm. in length and 3.1 mm. in width. The Indian female is 5.08 mm. in length and 2.72 mm. in width; the three males from this collection range from 3.51 mm. to 3.89 mm. in length and from 2.01 mm. to 2.20 mm. in width.

Most tick species show some range of individual size but the available evidence for *coniceps* suggests the presence of a large form in southern Europe, Northwest Africa, and the Near East (Palestine), and of a smaller form in southern U.S.S.R. and northern India. No morphological differences can be determined from the samples at hand. A larger comparative series should be examined however, before these populations are stated to be identical except for size.

The Agra specimens reported here are referred to *O. coniceps* because they were taken from land birds in an inland situation. In general, samples of populations from marine birds in coastal and island areas are designated as *O. capensis* Neumann. Adults of these two species are difficult if not impossible to distinguish. Further study of larvae is likely to reveal diagnostic criteria for differentiating ticks living under such dissimilar ecological conditions as swallow nests and dove cotes, on one hand, and penguin and other sea bird resting places on the other. Unfortunately, no Indian larvae are available for comparative purposes and one reason for presenting this note is to stimulate collection of additional research material from this interesting area.

Previous concepts of biological differences between *coniceps* and *capensis* have recently been modified by such reports as that of Morel (1959) on *coniceps* from an island off Wales (see Hobart and Whalley, 1959) and of Vermeil et al. (1958) of *coniceps* from nests of gulls (*Larus argentatus michahellis*) from Zembretta island off Tunisia. On ecological grounds, these should have been *capensis* rather than *coniceps*. Obviously, this complex is in need of exhaustive morphological and

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biological study for proper taxonomic disposition of numerous populations from circumpolar, temperate, and tropical areas of the world.

I am indebted to Professor Robert L. Usinger of the University of California for this very interesting material, and to Dr. Salim Ali of the Bombay Natural History Society for information concerning Agra swallows.

**SUMMARY.**

A collection of ticks apparently referable to *Ornithodoros* (*Alectorobius*) *coniceps* (Canestrini, 1890) from nests of swallows, *Hirundo* sp., at Agra, India, extends the previously known range of this species (southern Europe, northwestern Africa, Palestine, southwestern Russia) eastward by some 2000 miles. Usually reported from domestic fowl and man, this tick's wild hosts should be further sought by examination of nests of swallows and other birds. The small size of individuals in population samples from U.S.S.R. and India, in relation to those from Europe, northwestern Africa, and Palestine, suggests the presence of a large western form and a small eastern form of *O. coniceps*. Larvae from India are necessary in order finally to settle the question of differentiation of this population from *O. capensis* Neumann, and additional studies of *capensis* samples from many parts of the world are required for a satisfactory taxonomic disposition of this complex.

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