Vol. 14 (3) : 383-386 ORIENTAL INSECTS July-September 1980

DESIGNATION OF NEOTYPE FOR *COLPOCEPHALUM THORACICUM* KELLOGG AND PAINE, 1914 (PHTHIRAPTERA : INSECTA) WITH SOME REMARKS ON DISTRIBUTION

K.V. Lakshminarayana
Zoological Survey of India, 8, Lindsay Street, Calcutta 700 016, India
and
Roger D. Price
Department of Entomology, Fisheries & Wildlife, University of Minnesota, St. Paul, Minnesota 55108, U.S.A.

ABSTRACT. The collections of chewing lice studied by Kellogg & Paine, 1914 were damaged or lost in R. Varuna floods at Varanasi during 1944, when the Zoological Survey of India collection was housed there during the II World War. During a recent study by the first author of the type collections available in the department, the type slide of *Colpocephalum thoracicum* Kellogg & Paine, was found without the coverslip or specimen. This species was found by the second author to be a valid one and was redescribed from the material available to him. Recently, material in the British Museum (Natural History), London, was also examined by the authors and the neotype and neoparatype are now designated in this paper. Some remarks on the distribution of the species and host relationship are also provided.

Kellogg & Paine (1914) described *Colpocephalum thoracicum* off *Pavo muticus* Linne from Burma in the Indian Museum collections. Parts of the collections were either lost or damaged in the unprecedented floods of R. Varuna at Benares (now Varanasi) in 1944, when the collections of the Zoological Survey of India were moved there for safety during the II World War.

This species of chewing louse was recognized as valid by Hopkins & Clay (1952). Price & Beer (1964) redescribed and figured the species based on a male and female from the type-host from Thailand (Siam). The neotype was not designated then, since the authors were not aware as to the correct position of the type material.

In a recent paper Lakshminarayana (in press) stated that :

"This species was described by Kellogg & Paine (1914) apparently from a juvenile or teneral female example from the green peafowl, *Pavo muticus* Linne from Burma. This slide was registered in register 16, but the entries were not transferred into H8 register. In Z.S.I. collections, there is a slide without a coverslip and the specimen, with a label bearing the collection particulars, but without a name label. The coverslip together with

Published October 1980

the specimen and the name label of the species might have been lost in the R. Varuna floods, and therefore, any one who refers either to the type-slide cabinet or the H8 register will not be able to get any idea as to the existence of this type. In fact, Price & Beer (1964) while redescribing the species basing on a male and female from the type-host from Siam (Thailand), remarked that Dr. Miss Theresa Clay did not find the type in the Indian Museum collections, and the reasons are obvious. In the new H16 register, the slide has been formally re-registered and indicated that the type was lost, to facilitate designation of the neotype. The British Museum (Natural History), London, lent a slide through the courtesy of Dr. (Miss) Clay with the following details : "*Colpocephalum thoracicum* Kellogg & Paine, 1914, REE, *Dr. Robert E. Elbel*" on one label & "*Pavo muticus*, Thailand : Nan Sa Ban Phahang, 8 Dec. 1961, Mr. *Kitti Thonglongya*. British Museum 1965-630, v-139" on the other. This material and the one examined by Prof. Price can be designated as neotype and neoparatypes."

"*C. thoracicum* K. & P. was redescribed in detail in Price & Beer (1964). It has a counterpart on the Indian peafowl, *P. cristatus* Linne, described as *C. tausi* (Ansari, 1951). The latter species was also redescribed in Price & Beer (1964) and was also discussed in Lakshminarayana (1970b) basing on four females available in Z.S.I. collections. The relative differences were provided in Price & Beer (op. cit.). The posterior abdominal segments of the females showing the differences in the two species are figured (figs. 1a & 1b) on the basis of the British Museum and Z.S.I. material. The male genitalia of *C. thoracicum* not figured in entirety in Price & Beer (1964) are now figured (fig. 1b); the male of *C. tausi* is however, not available to the present author, but a figure of male genitalial sclerite and penis (fig. 2b) taken from Price & Beer (1964) is provided for comparison."

"Prof. Price will be approached for further action in the designation of the neotype and neoparatypes. Since the original despription was based on the female, the female will have to be designated as the neotype and the rest as neoparatypes."

The diagnostic characters of the species were already outlined by one of us (Price & Beer, 1964), and non-availability of the type was established beyond doubt by the other (Lakshminarayana, in press). The designation of the neotype, necessary under Art. 75 of the *Rules* (Anonymous, 1961) for this otherwise valid species is, therefore, made here as per following details :

Neotype : 1♀, from *Pavo muticus* Linne, Thailand, Nan Sa Ban Phahang, 8 Dec. 1961, coll. Mr. Kitti Thonglongya, labelled as *Colpocephalum thoracicum* Kellogg & Paine, 1914, Robert E. Elbel colls. British Museum, 1965-630 (V-139). *Neoparatypes :* 1♂, on the same slide as that of neotype; 5♀, 5♂, with the same data as the neotype, U.S. National Museum, Washington; 2♀, 2♂, with the same data, in the University of Minnesota collections, St. Paul; and 4♀♀, 4♂, off *P. muticus imperator* Delacour, Thailand, Phanom, Nakhon, Na Kae, Kan Luang, Phu Kho Mt, 16 July 1954, Dr. Elbel & Mr. Boonsong (RE-3912) U.S. National Museum, Washington.

Remarks : The distribution of *C. thoracicum* and *C. tausi* on *P. muticus* and *P. cristatus* is interesting. Of the two, morphologically *C. thoracicum* seems to be a stronger form than *C. tausi* and in a way their distribution is comparable to that of *Goniocotes parviceps* (Piaget) found on both *muticus* and *cristatus* and *G. mayuri* Lakshminarayana & Emerson on *P. cristatus* (see Lakshminarayana & Emerson, 1971). Lakshminarayana & Emerson (1978) came to the conclusion that possibly *muticus* evolved from *cristatus*, based on the morphology of *G. parviceps*, which in its turn might have evolved from an ancestral

form like *G. mayuri*, during the course of host evolution when the populations of the two hosts were separated for some time. Later, when the host populations were re-united due to changed geographical conditions, perhaps the stronger *parviceps* was able to establish on *cristatus* host. On the other hand, the slightly weaker *G. mayuri* from *cristatus* host could not establish on *muticus* host, either due to the modified feather structure of *muticus* or was eliminated in the interspecific competition with the stronger *G. parviceps*. In the same fashion *C. thoracicum* seems to be stronger than *C. tausi* by having spiniform and more robust setae especially in the female genital region, the male genital sclerite and penis, than their counterparts in *C. tausi*, found on the ancestral *cristatus* host. The nymphs of both the species are, however, almost identical (Price & Beer, 1964), suggesting that phylogenetically both species are very close. It would be interesting if *C. thoracicum* is discovered on *cristatus* host or *tausi* on *muticus* host. For the present, we have to assume that transfer did not take place during the reunion of the two host species due to changed geographical conditions, as in the case of *G. parviceps*. As things stand, the stronger *thoracicum* is restricted to *P. muticus*, like *G. parviceps* (which is also known on *cristatus*) and the weaker *tausi*, like *G. mayuri* to *P. cristatus* alone. Mr. C.H.C. Lyal (*in lit.*) informed that there is a slide labelled as *Colpocephalum thoracicum* (one female and three males) taken from a museum skin of *Pavo cristatus*, with no further data, in the British Museum (Nat. Hist.). The identity of this material in the light of our observations needs to be reassessed, as the specimens are from a museum skin on one hand and the host identification also questionable on the other, since no other data pertaining to the host is available.

ACKNOWLEDGMENTS. The authors are indebted to their scientific colleagues, Drs. K.C. Emerson, Robert E. Elbel, (Miss) Theresa Clay. Mr. C.H.C. Lyal and late J.R. Beer, and to the authorities of the U.S. National Museum, Washington and British Museum (Natural History), London, for several courtesies. The first author is also grateful to Dr T.N. Ananthakrishnan, Director, Zoological Survey of India, Calcutta, for facilities, and to the Department of Science & Technology, Govt. of India, for funding a short visit to the British Museum (Natural History) for examining collection there.

REFERENCES

ANONYMOUS, 1961. *International code of Zoological Nomenclature adopted by XV International Congress of Zoology*. Int. Comm. Zool. Nomencl. London, 176 pp.

HOPKINS, G H.E. & CLAY, T. 1952. *A Checklist of the Genera & Species of Mallophaga*, Brit. Mus. (Nat. Hist.), London, 362 pp.

KELLOGG, V.L. & PAINE, J.H. 1914. Mallophaga from birds (mostly Corvidae and Phasianidae) of India and neighbouring countries. *Rec. Indian Mus.* **10** : 217-243.

LAKSHMINARAYANA, K.V. (in press). Notes on the type collection of the chewing-lice (Phthiraptera : Insecta) in the Zoological Survey of India. *Occ. Pap. Rec. Zool. Surv. India.*

LAKSHMINARAYANA, K.V. & EMERSON, K.C. 1971. Mallophaga Indica—VI. Notes on *Goniocotes* (Mallophaga : Philopteridae) found on *Pavo cristatus* with description of a new species. *Oriental Ins.* **5** (1) : 95-102.

LAKSHMINARAYANA, K.V. & EMERSON, K.C. 1978. Evolutionary trend in two sympatric species of *Goniocotes* (Phthiraptera : Ischnocerophthirina) with remarks on host phylogeny. *Bull. Zool. Surv. India* **1** (2) : 151-156.

PRICE, R.D. & BEER, J.R. 1964. Species of *Colpocephalum* (Mallophaga : Menoponidae) parasitic upon the Galliformes. *Ann. Ent. Soc. Am.* **57** (4) : 391-402.