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Cleridae (Insecta: Coleoptera) type collection at National Forest Insect Collection (NFIC), Forest Research Institute, Dehradun (India)

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Abstract

Clerids are small predacious beetles (Coleoptera) that belong to the family Cleridae. In the National Forest Insect Collection (NFIC) Cleridae is represented by 31 authentically identified specimens including types of 27 species. The type material of Cleridae, deposited in the NFIC, Forest Research Institute, Dehradun (India), is listed and illustrated with digital automontage photographs. A list of 27 type species of Cleridae, 13 holotypes and 14 paratypes with information on species names, reference of the original publication, all available information on labels of types (country, locality, date of collection, collector name, etc) along with colored photographs of types and the labels that are attached to them, taken with Automontage 3-D imaging system, is provided.

Key words: Clerid beetles, Cleridae, types, National Forest Insect Collection

Introduction

Type specimens are crucially important to science as they represent definitive standards of reference that provide objectivity in scientific nomenclature (IZCN, 1999). The National Forest Insect Collection (NFIC), Dehradun (India), is an important historical insect collections of India. Prof. A.D. Imms, who served as head of the Forest Entomology Division, conceptualized and established this extensive insect collection. The forest entomology division of FRI has done extensive work on taxonomy, particularly beetles, termites and parasitic micro-Hymenoptera. NFIC is a well maintained insect collection that is frequently utilized for insect identification by scholars and scientists of various research and educational institutions including universities. The NFIC contains over three hundred thousand insect specimens belonging to eighteen thousand authentically identified species including type specimens representing 1800 species (Singh and Singh 2012). A significant part of the type collection is represented by Coleoptera representing 1244 species. Faisal *et al.* (2013) and Faisal & Singh (2014) updated and documented the buprestid and carabid NFIC type collections, respectively. Material may be borrowed by specialists by contacting the second author (sudhirs@icfre.org).

The clerids (Coleoptera: Cleridae), commonly known as checkered beetles, are a family of brightly-coloured, medium sized (measuring between 3 and 12 mm) predatory beetles. They are notable for the variety of their body shape and appearance and are characterized by a wide head, usually wider than the pronotum, the pronotum often rather cylindrical and usually narrower than the elytra. There is significant morphological variation within the family. The few small, dull species are often associated with stored product pests and are widely distributed. Corporaal (1950) catalogued 3,366 described species in the world. There are more than 3,700 described species of Cleridae grouped in 333 known genera (Gerstmeier 2014) under twelve subfamilies (Opitz 2010).

Types of Cleridae in NFIC were mostly collected during a period of twenty years between 1919 and 1939 from various states of India and one from Myanmar (pre-independence India). Collections were made by staff of the Forest Entomology Division of Forest Research Institute namely - G.D. Bhasin, B.M. Bhatia, C.F.C. Beeson, S.N. Chatterjee, R.N. Parker, M. Bose, J.C.M. Gardner and Balwant Singh. Collection surveys were conducted throughout the length and breadth of the sub-continent. Some specimens were also collected from the southern

M. Gardner, 19. iv. 1931". White label 2 stating "J. B. Corporaal, Paratype, *Tillus notatus* ab. *suturalis*". White label 3 stating "ex. *Acacia* sp.". Green label 4 stating "Paratype".

23. *Tillus notatus* ab. *tripartitus* Corporaal 1939b: 21 (**Fig. 6d**)

Paratype: White label 1 stating collection locality as "Bombay [INDIA: Maharashtra], B. M. Bhatia, 14. vii. 1933". White label 2 stating "J. B. Corporaal, Paratype, *Tillus notatus* ab. *tripartitus*". White label 3 stating "ex. Thick bamboo". Green label 4 stating "Paratype".

Remarks. Right antenna with scape only and left antenna is missing. Left middle leg is missing.

24. *Tillus notatus* ab. *tristiculus* Corporaal, 1939b: 21 (**Fig. 7a**)

Paratype: White label 1 stating collection locality as "Sappal 1700, Palaghat, [INDIA: Madras (Kerala)], J. C. M. Gardner, 20. iv. 1931". White label 2 stating "J. B. Corporaal, Paratype, *Tillus notatus* ab. *tristiculus* nov. sp.". White label 3 stating "ex dry sticks".

25. *Tillus unifasciatus* var. *cingulatus* Corporaal, 1939b: 22 (**Fig. 7b**)

Paratype: White label 1 stating collection locality as "Khairna 3200, Nainital [INDIA: Uttar Pradesh (Uttarakhand)], 13.i.1931, C. F. C. Beeson". White label 2 stating "J. B. Corporaal, Paratype, *Tillus unifasciatus* var. *cingulatus*". White label 3 stating "ex. *Pterocarpus marsupium*". Green label 4 stating "Paratype".

Remarks. Left antenna missing.

26. *Tillus vicarius* Corporaal, 1935: 34 (**Fig. 7c**)

Paratype: White label 1 stating collection locality as "Mundali, Chakrata [INDIA: Uttar Pradesh (Uttarakhand)], J. C. M. Gardner, 30. iii. 1934". White label 2 stating "J. B. Corporaal, Paratype, *Tillus vicarius* Male n. sp.". White label 3 stating "ex *Quercus stellate*". Green label 4 stating "Paratype".

Holotype deposited in BMNH.

Remarks. Left antenna of one of the females with scape only.

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