

**ON THE OCCURRENCE OF *DERMESTES FRISCHII* KUGELANN  
(COLEOPTERA : DERMESTIDAE) IN INDIA, WITH A LIST  
OF SPECIES OF *DERMESTES* IN THE COLLECTION OF THE  
ZOOLOGICAL SURVEY OF INDIA**

By G. MATHAI, *Entomological Assistant, Zoological Survey of India,  
Calcutta.*

In the course of examining the material of Dermestidae in the collection of the Zoological Survey of India, it was observed that a few specimens, representing one lot, that had been placed under *Dermestes vulpinus* Fabricius, were in fact referable to *Dermestes frischii* Kugelann, a species hitherto not recorded from India. This new record is of further interest as the specimens were found to have damaged rubber sheets stocked in the godowns of the Bata Shoe Co., Batanagar, near Calcutta. A perusal of the literature showed that no species of *Dermestes* has been recorded as being harmful to rubber. Besides giving notes on *D. frischii*, a list of the species of *Dermestes* present in the collection is also added.

***Dermestes frischii* Kugelann**

1792. *Dermestes frischii*, Kugelann, in Schneider, *N. Mag. Lieb. Ent.* IV, p. 478.  
1834. *Dermestes pollinctus*, Hope, in Pettigrew, *Hist. Egypt. Mum.* p. 55, pl. 5, fig. 4-7.  
1846. *Dermestes sibericus*, Erichson, *Nat. Ins. Deutschl.* III, p. 427.  
1889. *Dermestes uniformis*, Rey, *Echange*, V, p. 56.  
1911. *Dermestes frischii*, Torre, *Coleopt. Cat. Berlin*, XIV (33), pp. 43-44.  
1945. *Dermestes frischii*, Hinton, *Beetles associated with stored products*, London, I, pp. 269-272.

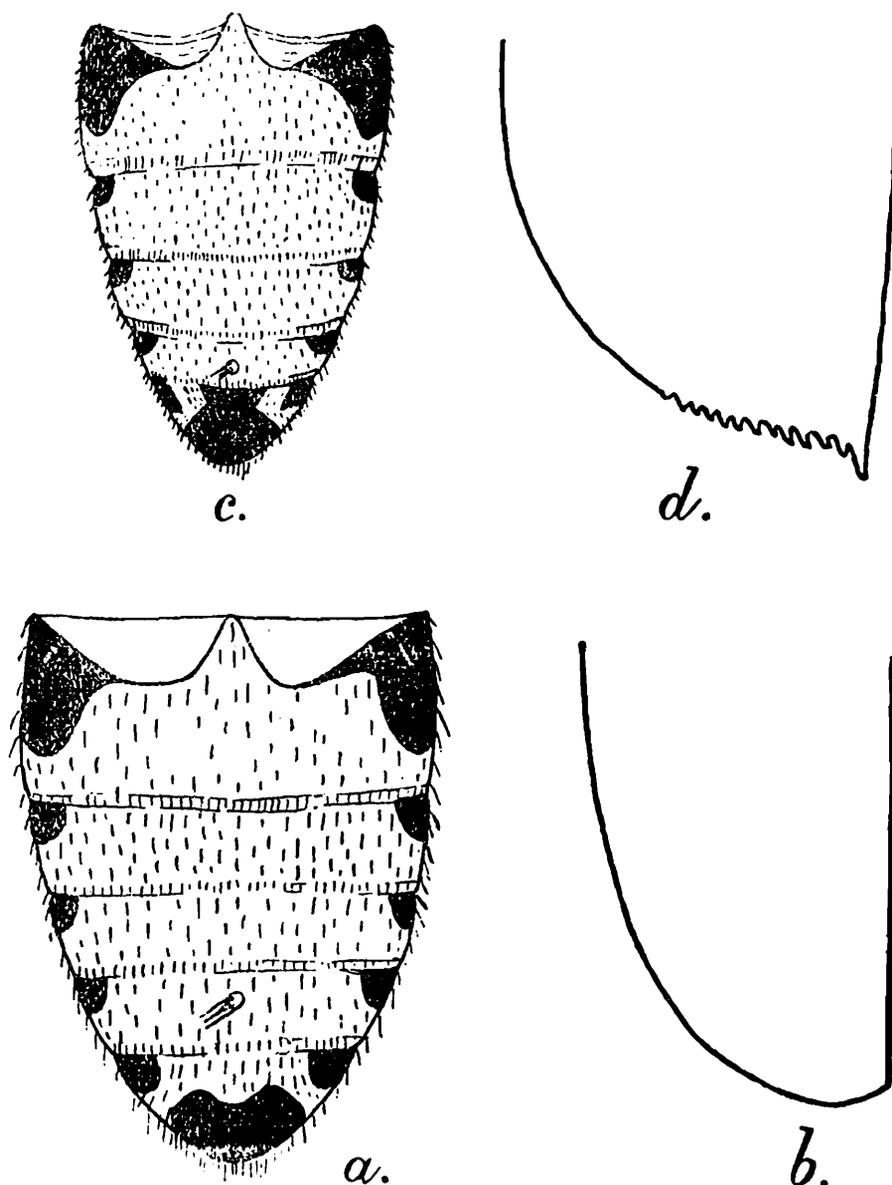
The specimens under report were first brought to the notice of the Zoological Survey of India in August, 1939 by the Bata Shoe Co., Batanagar, Calcutta, where they were found causing damage to a consignment of rubber received from Travancore. The records made at the time indicated that the adults were gnawing at rubber, thereby making several perforations in the rubber sheets and causing consequent damage to the material. Under laboratory conditions the larvae and adults were found to show preference to animal matter and at occasions, probably owing to scarcity of food, they were also seen preying on each other.

In the collections made at the time the pupae were more abundant than either the larvae or the beetles. Early stages of the larvae were also absent and it seemed that probably the rubber sheets were being bored into by the larvae for the purpose of making their pupal chambers.

The damage caused by *D. frischii* to economically important products, such as, hide, dried fish, bath sponge, dog-biscuits, fungi, silkworm cocoons and other stored products is well known. Principally the larvae and adults feed on carcasses, bones and carrion of various sorts, and the

larvae are known to bore their pupal chambers in woodwork of warehouses, cork, cotton and mortar and stone work of walls.

According to Loir and Legangneux<sup>1</sup> workers engaged in unloading cargoes of bones at Havre, France, suffered severely from itching of the skin, conjunctivitis, irritation of the respiratory passages, and nausea due to the large quantity of larval hairs in the air in the holds of the ship.



TEXT-FIG. 1.—*a, b, Dermestes frischii*; *c, d, Dermestes maculatus*.  
 (a) ventral view of abdomen of male to show colour pattern; (b) apex of left elytron;  
 (c) ventral view of abdomen of male to show colour pattern; (d) apex of left elytron;  
 (a, c, d, After Hinton, 1945).

*Distribution*.—*D. frischii* was known earlier from Europe, Asia (Palearctic region), Africa, Madagascar and North America, but through the agency of commerce, it is becoming more and more cosmopolitan in distribution. Under the circumstances, it will not be surprising, if careful investigations show the occurrence of this species in several other parts of India also. In fact, in the course of preparation of this paper, two specimens of a species of Dermestidae collected from a bone-heap, near Agra Fort on 28.vii.1954, were received in the Zoological

<sup>1</sup> Loir, A., and Legangneux, H., *Bull. Acad. Med. Paris*, LXXVIII (29), pp. 68-72 (1922).

Survey of India from Prof. R. D. Saksena, Balwant Rajput College, Agra and they have been identified as *D. frischii*.

It is closely similar to *D. maculatus* Degeer (= *D. vulpinus* Fabricius) with which it could be easily confused as had happened in the present instance. *D. frischii* may, however, be distinguished from *D. maculatus* by the following characters : (1) apical margins of elytra are entire and not serrate and the inner apices are not produced to form acute spines in *frischii*, whereas in *maculatus* the apical margins of elytra are serrate and the inner apices are produced to form acute spines ; (2) sternites two to five of the abdomen are without impressed lines at the sides in *frischii*, whereas in *maculatus* the sternites are with impressed lines at sides ; (3) arrangements of the white hairs on the abdominal sternites of the two species are different (cf. text-fig. 1a and 1c), the chief distinction being in the pattern of apical patch of hairs on the fifth or last sternite. In *frischii* the apical patch is reddish brown and extends to about middle of the sternite, whereas in *maculatus* the apical patch is black or dark brown and extends fully to the entire length of the segment.

The specimens under report come close to the description of a variety of *D. frischii*, viz., var *sibericus* Erichson (1846), and differ from the typical *frischii* in the following colour pattern and disposition of hairs ; (1) the white or yellowish white lateral band of the pronotum is without a patch of black hairs near base ; (2) the disc of the pronotum has the whitish or yellowish hairs much more numerous than the black so that the lateral and anterior bands of white hairs are not very sharply differentiated from the central region of the pronotum ; (3) the elytra have the whitish and brownish hairs much more numerous than the black so that the elytra appear much greyer than is the case in the typical *frischii*.

*Material*.—BENGAL : on rubber, Batanagar, near Calcutta, vii, 1933 (*Bata Shoe Co.*), (6 adults, pinned ; 2 adults, 4 larvae and 14 pupae in spirit). UNITED PROVINCES : from bone-heap, near Agra Fort, Agra, 28. viii. 1954 (*Prof. R. D. Saksena*) 1 ex.). EUROPE : No further data given, (1 specimen, pinned).

#### *Dermestes maculatus* Degger

1774. *Dermestes maculatus*, Degger, *Mem. Ins.* IV, p. 223.

1781. *Dermestes vulpinus*, Fabricius, *Spec. Ins.* 1. p. 64.

1911. *Dermestes vulpinus*, Torre, *Coleopt. Cat.* Berlin XIV (33), pp. 49-50.

1945. *Dermestes maculatus*, Hinton, *Beetles associated with stored products.* London 1, pp. 261-269.

*Common name*.—Leather beetle. In U. S. A., it is known as hide and tallow Dermestid ; in Canada, hide or leather beetles, and skin beetle in India and S. Africa.

In the Indian entomological literature this species is referred under *Dermestes vulpinus* Fabricius. As it is very widely distributed in India, collectors are liable to confuse other species with it. However, the white or yellowish white hairs of the sides of the pronotum together with the serrate and acutely produced apices of the elytra (text-fig. 1c, 1d) will serve to distinguish this from the remaining species of *Dermestes* occurring in India. The species breeds in animal matter, such as, stored hides and skins, carcasses, meat, cheese, dried fish, mounted shikar trophies,

silkworm cocoons, etc. It also attacks horn, feathers, fur, bristles and glue of brushes.

*Distribution.*—Cosmopolitan.

*Material.*—(a) *Dry collection*: KASHMIR: Kogyar, Yarkand Expedition (*Stoliczka*) (3 exs.). UNITED PROVINCES: Almora, Kumaon Hills, ii.1922 (*C. Paiva*) (1 ex.); Izatnagar, 23.iii.1949 (*P. K. Sinha*), (4 exs.). BIHAR: Madhupur, 23.iv-10.v.1911 (*C. Paiva*), (1 ex.). BENGAL: Calcutta, (4 exs.); Calcutta (*Museum Collector*) (2 exs.); Calcutta, 22.iv.1912 (*E. C. Dormieux*), (1 ex.); on hide, Calcutta (*G. Watt*), (1 ex.); on skeleton of elephant, Calcutta, 5.ii.1907 (*J. Caunter*), (2 exs.); on bones of jackal, Calcutta Maidan, 13.iii.1912 (*F. H. Gravely*), (3 exs.); on carcasses of vulture, Calcutta Maidan, iii.1912 (*F. H. Gravely*), (2 exs.). ASSAM: Naga Hills (*H. H. Godwin Austin*), (1 ex.); Manmluh, Khasi Hills, 13.v.1909 (*B. Warren*), (1 ex.). SOUTH INDIA: Madras (*East India Co., Museum*), (1 ex.); on board ship, 10 miles off Cocanada, Madras Coast, 16.v.1908 (*C. Paiva*), (2 exs.). SIKKIM: Sikkim (*A. V. Knyvett*), (1 ex.). NEPAL: Pipan, Nepal Terai, 28-29.iv.1907 (*Museum Collector*), (1 ex.). BURMA: Tavoy, Lower Burma (*Museum Collector*), (1 ex.); on semiputrid jerked beef, Rangoon (*H. H. Marshall*), (10 exs.). NEWZEALAND: (1 ex.).

(b) *Spirit collection.*—BENGAL: Calcutta (*Museum Collector*), (4 adults and 2 larvae); on hide, Rajshai, (4 larvae).

### *Dermestes ater* Degeer

1774. *Dermestes ater*, Degeer, *Mem. Hist. Ins.* IV, p. 23, pl. 18, fig. 7.

1775. *Dermestes cadaverinus*, Fabricius, *Syst. Ent.* p. 55.

1911. *Dermestes cadaverinus*, Torre, *Coleopt. Cat.* Berlin XIV (33), pp. 41-42.

1939. *Dermestes ater*, Lapesme, *Bull. Soc. ent. Fr.* 44, p. 192.

1945. *Dermestes ater*, Hinton, *Beetles associated with stored products*, London I, pp. 296-299.

Originally referred to as *Dermestes cadaverinus* Fabricius, it was relegated to the synonymy of *Dermestes ater* Degeer by Lapesme (1939). It is generally found in carcasses of dead birds and animals and is a pest of dried fish, skins and hides, leather goods, hog bristles, woollen tops, cheese, dead pupae and adults of silkworms, stored copra, poonac and dried mushrooms.

*Distribution.*—Cosmopolitan.

*Material.*—*Dry collection.*—BIHAR: on stored Tussar cocoons, Hazaribagh, 10.i.1887 (*J. Wood Mason*), (1 ex.). BENGAL: Calcutta (*Shureef and Lateef*), (2 exs.); on mulberry silkworms, Rajshai dist., (*J. C. Cleghorn*), (5 exs.). ANDAMANS: Nicobar Island, (1 ex.).

### *Dermestes coronatus* Steven

1808. *Dermestes coronatus*, Steven, in Schonh, *Syn. Ins.* I (2), p. 85.

1911. *Dermestes coronatus*, Torre, *Coleopt. Cat.* Berlin XIV (33), p. 43.

A specimen with the label *Dermestes coronatus* Steven is present in the collection, but is not in a good state of preservation to warrant detailed observation. This species has not so far been recorded from India, and further material is necessary before its occurrence in India can be confirmed.

*Distribution.*—Sudrussland, ? India.

*Material.*—KASHMIR: Sticol, Yarkand Expedition, (1 ex. pinned, damaged).

The following two species, though not represented in the collection of the Zoological Survey of India, are known from India.

**Dermestes carnivorus Fabricius**

1775. *Dermestes carniferus*, Fabricius, *Syst. Ent.* p. 55.

1911. *Dermestes carnivorus*, Torre, *Coleopt. Cat.* Berlin XIV (13), pp. 42-43.

1945. *Dermestes carnivorus*, Hinton, *Beetles associated with stored products*, London I, pp. 285-287.

This species is known to be a pest of hide and dried skin, raw tobacco and cacao.

*Distribution.*—North and South America, Europe, India.

**Dermestes leechi Kalik**

1952. *Dermestes leechi*, Kallik, *Pan-Pacif. Ent.*, San Francisco, XXVIII, p. 45.

*Distribution.*—South India.

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