

Crambus bonifatellus Hulst, an unexpected Component of the Lepidopterous Fauna of Greenland.

By
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The collecting of insects recently carried out in Greenland by Mag. sc. Chr. Vibe in connection with the zootopographical investigation of this island has brought some interesting additions to the list of Greenland insects.

The material of *Microlepidoptera* has been handed over to me for determination. Although a publication of the results in details will follow later, a species of special interest will be mentioned here.

Among the *Pyralidina* were several specimens of a *Crambus* sp. — a genus not previously recorded from Greenland — which I could refer to none of the hitherto known species occurring in Northern Europe or in the North-Eastern part of North America. I therefore inclined to the supposition that the specimens probably belonged to a nov. sp.

On my request Dr. phil. S. L. Tuxen of the Zoological Museum of Copenhagen kindly submitted the drawing of the very characteristic male genitalia to Professor Alexander B. Klots of the Natural History Museum of New York, who at present is undertaking a revision of all the North American representatives of the genus *Crambus*.

Prof. Klots pointed out that the genitalia looked very different from those of any other *Crambus* species familiar to him, except one, viz. *Crambus bonifatellus* Hulst, whose genitalia were astonishingly alike those shown on the drawing. Having seen nothing of the Greenland specimens but a sketch of the male geni-

talia, prof. Klots of course could not state that these specimens belonged to *C. bonifatellus*, and judging from the distribution of this species, he considered it most improbable that that was the case.

According to Dyar (List of North Am. Lep., Bull. USNM 52 (1902) p. 409) *C. bonifatellus* is recorded exclusively from Colorado. Prof. Klots communicates that it is known from California and Colorado (Rocky Mountains). Taking into consideration the considerable geographical distance between Colorado and Greenland, and the difference in climate between these two places, it is no wonder that one would hesitate in referring the Colorado and the Greenland specimens to the same species.

Prof. Klots has then been kind enough to send a specimen of *Crambus bonifatellus* Hulst ♂ (labelled: Capital City, Hinsdale Co., Colorado, 25. VII. 1936) for comparison. This specimen is slightly larger (length of forewing 10.5 mm) and paler than the Greenland specimens (measuring abt. 9.5 mm), but the wing pattern corresponds, and, by dissection, the genitalia proved to be precisely the same. The Greenland species must thus be regarded conspecific with *bonifatellus*.

Fig. 1—2 show two of the specimens from Greenland.

Wings: Ground color of forewing brown, paler dorsally. Wing markings restricted to a terminal series of small dark brown dots, and a short abrupt darker streak, rising from the middle of the wing, directed towards termen. Hind wings dark grey. Length of forewing 9.0—9.5 mm.

Male genitalia (fig. 3): Uncus stout, club-shaped, sharply pointed. Gnathos weak, bow-shaped. Costal arm long, spatulated, weakly sclerotized, set with hairs. Valvula and sacculus heavily sclerotized, each terminating in a pointed, slightly curved extension. Aedeagus cylindrical, narrowed towards base, scobinated apically. Cornuti absent.

Female genitalia (fig. 4): Ostium funnel divided into two lobes. Apparently no signum.

Time of appearance: Medio July—medio August.

Localities in Greenland: Bredefjord 4. VIII. 1948 (several sp.), Kagssiarssuk 30. VII. 1948 (several sp.), Eqaluit 14. VII. 1948 (1 sp.), Narsak 28. VII. 1948 (several sp.), Godthåb-Kornok 16. VIII. 1942 (1 sp.).

These localities are situated within a Northern latitude of abt. 60° — 64° .

Colorado, the locality nearest to Greenland, is separated from that island by some 2500 miles. Its latitude is abt. 37° — 41° . The climate is different. In Colorado (Denver) the annual rainfall amounts to 350 mm, in Greenland the rainfall varies from place to place, but is at any rate much higher than in Colorado. Godthåb has thus 670 mm, and Narssak 940 mm. The average temperature of the coldest, resp. warmest,

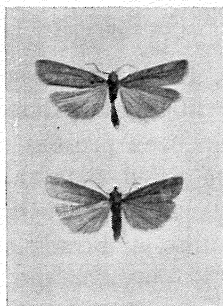


Fig. 1—2. *Crambus bonifatellus* Hulst. Greenland. $\times 1$. (auct. phot.).

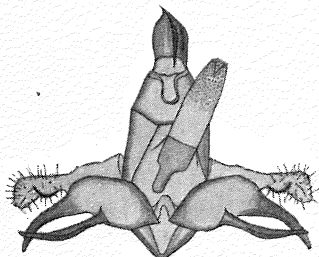


Fig. 3.

Fig. 3. *Crambus bonifatellus* Hulst. Greenland. Male genitalia. (auct. del.).

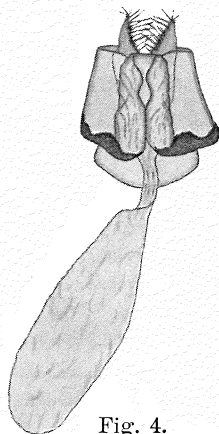


Fig. 4.

Fig. 4. *Crambus bonifatellus* Hulst. Greenland. Female genitalia. (auct. del.).

month in Denver is $\div 1^{\circ}$ C., resp. $+ 22^{\circ}$ C., in Narssak $\div 7^{\circ}$ C., resp. $+ 9^{\circ}$ C.

As the first specimen was observed in Greenland in 1942, at a time when troops from the U. S. A. forces had been present on the island for two years, it may be suggested that the species might have been incidentally introduced to Greenland. This is, however, very unlikely. Firstly, it is rather improbable that a sort of supply for the troops suitable to carry living specimens of some or other stage of this species should have been transported to Greenland just from California or the Rocky Mountains district. Secondly, the *Crambus* species are far from being synanthropic. They are living in meadows, grass fields, and similar biotopes, feeding on stems or roots of grasses. Finally, it must be remembered that the occurrence in Greenland is not restricted to separate finds. The species has been met with in five different localities, separated by at least 300 miles, and Mr. Vibe tells that the species is common in several of these localities, flying in numbers among the grassy vegetation.

If future collecting will not definitely alter the picture of the distribution of this species, the most probable explanation of its extraordinary occurrence in these remote districts seems to be the assumption that the species in the past has had a much wider distribution, and now is present as a relict in its restricted haunts.

Postscript. — After the above was ready for press, Prof. Klots — having now examined one of the Greenland specimens — communicates that he fully agrees in determining it as *bonifatellus* Huslt. American specimens of this species from higher altitudes are smaller, duller and darker, like the Greenland form, which can hardly be separated from these, even as a subspecies. He adds the localities: Arizona, Utah, Wyoming, Oregon, British Columbia (all situated more westerly than Colorado).
