

ON AN UNUSUAL CLUE TO THE IDENTITY OF A SPECIES.

By JAMES WATERSTON, D.Sc., Assistant-keeper, Dept. of Entomology,
British Museum (Nat. Hist.), London.

(Published by permission of the Trustees of the British Museum.)

IN a previous communication to THE SCOTTISH NATURALIST (July-August, 1922, pp. 101-104) on the Ischnocera (Mallophaga) occurring on our British grouse, I made the remark that quite unnecessary difficulties had been raised in interpreting the name *Pediculus lagopi*, L. The object of the present paper is to discuss the meaning and validity of this name and to shew its proper application.

The question of the formal validity of *P. lagopi*, L., need not detain us long. The original description gives in detail about a dozen more or less distinct characters besides a host connection, so that the name is available for use if it proves to be interpretable. Before discussing the definition itself we can narrow the problem somewhat by considering the hosts to whose parasites it might apply. Linné's original statement is that *P. lagopi* is a *Lagopus* parasite, and to this of course we must ultimately return in any decision arrived at, but subsequent writers have erroneously assumed that *Lagopus* and *Lyrurus* harbour the same Ischnocera, which has complicated the discussion. It so happens, however, that each of these host genera has a *Goniodes* sp. and a *Lagopæcus* sp. peculiar to itself, and as for various reasons the names of the *Goniodes* sp. and *Lagopæcus* sp. on *Lyrurus* spp., and of the *Lagopæcus* sp. on *Lagopus* spp. are satisfactorily fixed, it merely remains to decide whether *Pediculus lagopi* is synonymous with any of these or is to be used for the *Goniodes* on *Lagopus*.

The original description of *Pediculus lagopi* may now be analysed. It runs as follows:—

"Corpus depressum, utrinque obtusum. Abdomen antice angustatum, pone dilatatum, figura fructus *bursæ-pastoris* aut *veronica* capsula, cinctum margine nigro

introrsum serrato. Caput absque thorace notabili adfixum, utrinque obtusum lateribus emarginatum."

There can be no reasonable doubt that this description as a whole indicates a *Goniodes*. The salient points noted are: the lateral emargination of the head, which is very distinctly separated from the thorax; the narrowness of the abdomen anteriorly, contrasted with its posterior breadth: also its inner marginal "serrations," caused by the proximal or admedian branch of the lateral bands shining through the integument.

The botanical reference, at first sight a little obscure, provides, in reality, a clear and curious clue to the generic identity of Linné's insect. In Fig. 1*a*, there is drawn the

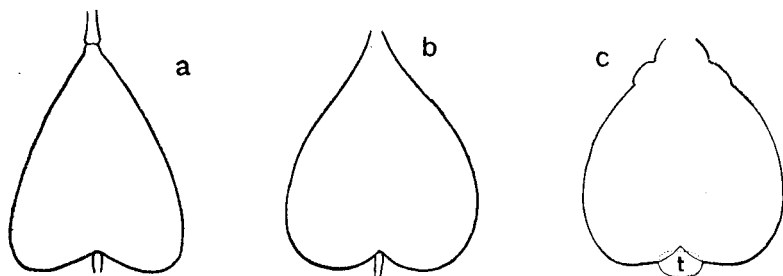


FIG. 1.—Illustrating the Comparison made by Linné.

fruit capsule of the Shepherd's Purse (*Capsella bursa-pastoris*, L.) at an early stage shortly after the petals have fallen and before the pistil has quite withered off. The capsule has attained about its maximum expanse and has a characteristic cordiform facies, but the seeds have not yet ripened within it. In Fig. 1*b*, the corresponding phase in our common Brooklime (*Veronica beccabunga*, L.) is illustrated, while Fig. 1*c*, gives an outline of the thorax and abdomen (δ) of the *Goniodes* which occurs on every species of the genus *Lagopus*. The justice of Linné's comparison must be evident at a glance. Fig. 1*c*, is drawn from a specimen mounted in balsam, in which the inconspicuous last segment (t) is flattened out. The genitalia are retracted. In life, however, this segment is frequently borne upturned with the genitalia subexserted (the apices of the paramers protruding)

which accentuates the resemblance already remarked upon. *The available evidence therefore indicates conclusively that "Pediculus lagopi" is to be interpreted as a Goniodes, and since but one species of this genus occurs on the host genus the application of the name is automatically fixed.*

As regards the hosts Linné says, "habitat in *Lagopus*" i.e., *Lagopus* spp., and he gives as a popular name for his parasite "Le pou de la gelinotte blanche." The name "gelinotte blanche" has been used both for Willow-Grouse (group of *Lagopus lagopus*) and Ptarmigan (group of *Lagopus mutus*), but the argument is unaffected from whichever host Linné described his species. I have been unable to find evidence for the existence at any time of type material of the species whose synonymy is briefly as follows:—

GONIODES LAGOPI (L.)

"*Pediculus lagopi*," Linné, *Syst. Nat.*, Ed. X., p. 614, sp. 36, 1758.

"*Pediculus lagopi*," Linné, *Fauna Suecica*, p. 340, No. 1167, 1746.

"*Pediculus lagopodis*," Gmelin, J. F. in Linné, *Syst. Nat.*, Ed. XIII., Vol. i., sp. 2920, 1790 (emend. of *lagopi*.)

"*Goniodes tetraonis*," *auct plur.*, nec Linné (1758.)

"*Goniodes heterocerus*," Piaget (1881) (in parte) nec Nitzsch in Giebel (1874.)

The two latter names are synonymous and apply only to the *Goniodes* of *Lyrurus*.



R.M.& W.H.P.

*Unusual Clue to the
Identity of a Species.*

James Waterston.

