

OCCURRENCE OF A MIDGE, *OLIGOTROPHUS BETHELI* FELT, ON JUNIPER ON VANCOUVER ISLAND, BRITISH COLUMBIA (DIPTERA: CECIDOMYIIDAE)¹

N. V. TONKS

Research Station, Agriculture Canada
Sidney, British Columbia

On June 2, 1969, I was asked to examine a planting of *Juniperus sabina* in a nursery at Royal Oak on southern Vancouver Island. There were many dead branchlet tips on each shrub and the planting had an unsightly brown appearance. Numerous small flies were active around the plants and there were many small, elongate, orange-coloured eggs on the new growth. The midges were later identified as *Oligotrophus betheli* Felt, a species not previously recorded in Canada.

Felt (1912) describes this species from individuals reared on *J. utahensis* in Colorado. Foote (1965) records this midge from Colorado and Utah. Appleby and Neiswander (1965) describe it and outline the life history in Ohio under the name *O. apicis*, which Gagne (1967) lists as a synonym of *O. betheli*.

The life history of this species on Vancouver Island is very similar to that described in Ohio. The yellow-orange larvae overwinter in the branchlet tips, where they pupate in the spring. Adults emerge in late April and May to lay eggs on the new growth. These eggs hatch in late May and June and larvae enter the

branchlet tips to feed. Each infested tip develops into a brown, fleshy, conical gall containing a single larva.

During 1969 there was a second peak of adult emergence during July, with a third occurring in September. Counts made in August on 2,854 tips from 20 plants in the nursery showed a mean of 23% of the tips infested per plant. Saleability of the crop was seriously reduced because of the discoloured and restricted growth.

Appleby (1965) obtained control of this midge in Ohio with foliage sprays of dimethoate applied in late May, early June, or late June. Excellent control was obtained on Vancouver Island with a foliage spray of Diazinon 50% E.C. at 1 pint per 100 gallons applied in late May. There was no resurgence of midge activity in this planting except on two isolated unsprayed plants. A second application of diazinon was made over the entire planting in mid-August.

There has been no further report of this midge infesting junipers on southern Vancouver Island.

Acknowledgements

Dr. R. J. Gagne, Systematic Entomology Laboratory, U.S. Department of Agriculture, Washington, D.C., identified the flies. Dr. J. F. McAlpine, Biosystematics Research Institute, Canada Department of Agriculture, Ottawa, provided additional information from correspondence with Dr. Gagne.

¹Contribution No. 233, Research Station, Agriculture Canada, Sidney, British Columbia.

References

- Appleby, J. E. 1965. Life history and control of *Oligotrophus apicis* sp. n. (Diptera: Cecidomyiidae) a midge injurious to junipers: with key to species of *Oligotrophus* found in the United States. Diss. Abs. **25**:4869.
- Appleby, J. E. and R. B. Neiswander. 1965. *Oligotrophus apicis* sp. n., a midge injurious to junipers, with key to species of *Oligotrophus* found in the United States (Diptera: Cecidomyiidae). Ohio J. Sci. **65**:166-175.

- Felt, E. P. 1912. New gall midges or Itonidae (Diptera). N. Y. Entomol. Soc. J. **20**:148.
- Foot, R. H. 1965. Family Cecidomyiidae in A. Stone, et al. A catalogue of the Diptera of America north of Mexico. U.S.D.A. Agric. Handb. **276**:264.
- Gagne, R. J. 1967. *O. betheli*. Zool. Record **104**:622.

BOOK REVIEW

A Catalog of the Diptera of the Oriental Region. Volume I. Suborder Nematocera edited by MERCEDES D. DELFINADO and D. E. HARDY. The University Press of Hawaii, Honolulu, 1973. Pp. 618. \$18.50.

A synoptic catalogue is not an easy work to review. When it is well bound, clearly and attractively typeset, and meticulously edited the task is even more difficult. The present work differs in two main respects from its predecessors, the Nearctic Catalogue edited by A. Stone *et al* and the Neotropical Catalogue edited by N. Papavero. The former is a single volume, the latter has a fascicle for each family. Publication of the Oriental Catalogue in three volumes is an excellent compromise. A single volume would have been very bulky and would, for those interested in only one or a few families, have involved an unnecessarily large financial outlay. The other major difference is the inclusion of the full journal citation with each name rather than a date and page reference to an accompanying bibliography. This perhaps increases the bulk of the book, and reduces the bibliography to a selected rather than an almost complete list of relevant papers, but it makes the work so much more convenient to use that I approve the arrangement wholeheartedly.

The catalogue is supposed to be complete through 1970, but a few omissions have been noted. Eleven species of Mycetophilidae of the gen-

era *Macrocera*, *Boletina* and *Symmerus* described or recorded from Taiwan by Sasakawa in 1966 and by Saigusa in 1966 and 1968 are not included. I hope that a list of omissions can be compiled and distributed.

The most striking feature of the fauna as recorded by the catalogue is the enormous number of Tipulidae. The 3223 Oriental species make up 52% of the Nematocera; in the Nearctic region they make up only 29%. The proportion will probably decrease in both regions as other families are more thoroughly studied; the present figures are perhaps more an indication of the zeal and enthusiasm of Prof. C. P. Alexander than they are of the actual composition of the fauna.

This is the third major regional catalogue of Diptera to appear during the last nine years. When one considers that the last previous catalogues of such scope were those of Aldrich for Nearctic Diptera in 1905 and of Becker, Kertész *et al* for Palaearctic Diptera and about half the world Diptera in 1902-1910, this flurry of catalogues is as remarkable as it is welcome. For taxonomists of Diptera, and indeed for all biologists interested in the order, these publications are of inestimable value. For all biological taxonomists they provide convincing evidence that the discipline, which Ehrlich in a famous forecast had seen as extinct by 1970, is alive and flourishing.

—J. R. Vockeroth