

Carlo Vidano's work on Auchenorrhyncha

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Abstract

Carlo Vidano's 40 years' activity as an auchenorrhynchologist has its fulcrum and compendium in his collection, made of approximately 16,000 specimens of 160 species, arranged in 62 entomological boxes. The protocols of his collections - carried out systematically in all regions of Italy, besides those made sporadically in European and extra-European nations - are gathered in five notebooks and are marked as "Typhl." from 001 to 974. A great number of comments, annotations, and observations, often very detailed, of biological and taxonomic interest accompany every collection. Meticulous field observations, supported by rearings, enabled him to describe the biology and ethology of several species, establishing their number of generations, overwintering and oviposition mode, fecundity, sex-ratio, presence of egg parasitoids and parasitoids of other life stages, being able to explore the possibility of transmitting phytopathogenic agents, and attributing malformations and decolorations of plant organs to mechanical actions caused by nutrition. The results of Carlo Vidano's collecting and research concerning Typhlocybae are in press in a book entitled "Collections made by Prof. Carlo Vidano", that will be published by the Italian Entomological Society. This book opens with the self-portrait and has about 300 pages illustrated with 15 black and white original and unpublished drawings of genitalia (aedeagi, pygofer, etc.) and wing veins, all taken from the notebooks, and with 10 photographic examples of Vidano's collection boxes.

Key words: Auchenorrhyncha, insect collections, faunistics, biology, host plants.

Carlo Vidano was born in Caluso, a small town about 25 km from Ivrea (Piedmont, Italy). Here he began to be interested in Auchenorrhyncha as a student, during his attendance at the Institute of agricultural Entomology of the University of Turin, when he found a new pest on the plants of his father's orchard. It was the Membracid *Stictocephala bisonia* Kopp et Yonke (known at that time as *Ceresa bubalus* F.), that was not yet reported for Italy, and he made it the object of his degree thesis that he discussed on the 11th of November 1949 in the Faculty of Agriculture. Immediately after his graduation, being appointed Assistant Professor to the chair of agricultural Entomology, his interest was attracted by the subfamily Typhlocybae. He concentrated on this subfamily his research, that he always led with great keenness, a lot of passion and sacrifices, in the spare time he was allowed to cut out from the academic engagements that fully absorbed him in problems of entomology applied to agriculture, i.e. on holidays and during the night.

The collections were made uninterruptedly from 1955 to 1968, the year in which Vidano was called as full professor to the Chair of Apiculture of the University of Turin. Coherent to his professional ethics according to which a chair had not to be honoured only with teaching but above all with scientific research, he dedicated himself intensely to pure and applied Apidology, until then neglected in Italian universities, and he elevated it to the rank of an important and respectful science. Therefore he interrupted his studies on his beloved leafhoppers and took them up again in 1978, when he returned to the Chair of agricultural Entomology, and pursued until 1989, the year of his premature passing. In his collections there is therefore a gap of approximately 10 years.

The results of Carlo Vidano's collecting and research concerning Typhlocybae have their fulcrum and their compendium in his collection, made of approximately 16,000 specimens of 160 species, arranged in 53 ento-

mological boxes, to which we must add 9 more boxes labelled: Material in study, Collection C. Vidano; Typhlocybae in study; Parasites of Typhlocybae; *Hordnia circellata* (Signoret); *Graphocephala fennahi* Young; Auchenorrhyncha I; Auchenorrhyncha U.S.A.; Auchenorrhyncha China; African Auchenorrhyncha, for a total of 62 boxes.

The specimens are preserved mostly dry on pointed cards or stored inside small transparent plastic tubes; some are in alcohol within glass test tubes with a cork stopper. Being species that are classified through the examination of the genitalia, several males are dissected and the pygofer and the aedeagus are prepared and glued on the same card. On the cards beneath, Carlo Vidano wrote the protocol number of the collection, together with the locality, the date, the host plant, and the altitude. Leaves or twigs with traces of the trophic activity complete the data of species of particular naturalistic or agricultural interest. In the collection, 13 species types described by Vidano are preserved.

The protocols of his collections - carried out systematically in all regions of Italy, besides those made sporadically in European and extra-European nations - are gathered in five notebooks and are marked as "Typhl." from 001 to 974. They include the main sites in a chronological order. For every locality the following data are given: date, host plant, localization of the plant in the environment and of the individuals on the plant, trophic behaviour, altitude, often the exposure, hour, biotope, plant biocenosis, occupied niche, meteorological conditions, insolation, shade, and any other biotic and abiotic element useful to know the ecologic and ethologic requirements of the species considered. Everything nearly always written using a black pencil. For further completion and for greater clarity, in many pages for several species there are sketches of eedeagi, genital laminae, the pygofer and its appendages, wing

nerves, and references to previous captures.

A great number of comments, annotations, observations, often very detailed, of biological and taxonomic interest express the endeavour and the effort, but also the doubts and the uncertainties of the researcher (above all of the neophyte), always cautious and measured in his conclusions.

The danger of wrong classifications in presence of reduced, anomalous eidegi or that however were far from normality because of the parasitization by Pipunculid Diptera and Dryinid Hymenoptera is denounced and demonstrated with plenty drawings. In the same way, the chromatic variations and the drawings that appear in newly emerged, or overwintering individuals, are described and illustrated with the rectifications of uncorrect diagnoses, that were put in light also with rearings in particular conditions of light, temperature, and humidity.

Besides field collecting, carried out very rarely by means of a sweepnet, more often with glass tubes directly on well identified herbaceous and arboreal plants, many specimens were obtained from juveniles reared until emergence on the host plant in the laboratory.

Meticulous field observations, supported by rearings, enabled him to describe the biology and ethology of several species, establishing their number of generations, overwintering and oviposition mode, fecundity, sex-ratio, presence of egg parasitoids and parasitoids of other life stages, being able to explore the possibility of transmitting phytopathogenic agents, and attributing malformations and decolorations of plant organs to mechanical actions caused by nutrition.

The abbreviation "Typhl." followed by a number precedes all the species and indicates the collecting in a chronological order. Afterwards the Italian region or the other country and, in parenthesis, the abbreviation of the province of the mentioned locality are given. More species can fall within the same "Typhl." number; this means that they were collected on the same day, in the same place (or nearby places), on the same plant or on different host plants. Every "Typhl." refers therefore to a precise biocenosis. So, grouping all the species that hold the same "Typhl." number, one can reconstruct the more or less complex biocenosis (of the leafhopper and of the plant) for that place in that period. And, as the plant species are mentioned at the various altitudes too, a punctual survey, across the expansion or the reduction of the plant's distribution area, can lead to identify the climatic and ecological variations that occurred in the different sites during the last fifty years.

Specimens considered particularly interesting, morphological features, plants with symptoms, parasitized individuals, parasitoids, and predators have been photographed with unparalleled skill. Some photographs, marked with "Phot." followed by a number, are inserted in the relative protocols. The prints, generally in black and white, supplied on the back with the essential data, subdivided by species or families, are conserved in about forty cardboard boxes belonging to a group of approximately 700 of such containers, over a hundred of which concern other Auchenorrhyncha in general, their natural enemies, the symptoms of their presence on the plants, while the others illustrate the various aspects of

insects of different orders. The slabs of the aforesaid photographs are catalogued in a progressive order for a total exceeding 26,000 units. The characteristics of every subject are described in specific notebooks where, besides the number and the date, there are detailed indications on the collecting locality, sizes, sex, and any other useful information for the determination and classification of the species and for reporting the alterations caused to plants, above all to the cultivated ones. The colour slides of Typhlocybinae displayed in about forty containers are a part of this group, while other 3,000 are preserved in transparent slide-holders; also these slides, prepared for classes, practices, conferences, etc., belong to a number of subjects estimated in tens of thousands, dedicated to other Auchenorrhyncha and insects of different orders.

This Congress, which is held in the Canavese district, where Carlo Vidano was born, grew up, made his first research, and where he has been now lying in a small graveyard for 19 years, is a good occasion to gather in a book the notes he wrote during the over 40 years of field research on Auchenorrhyncha. This book opens with the self-portrait and has about 400 pages illustrated with 15 black and white original and unpublished drawings of genitalia (aedeagi, pygofers, etc.) and wing veins, all taken from the notebooks, and with 10 photographic examples of Vidano's collection boxes. It begins with a preface dealing with Auchenorrhyncha generalities followed by an introduction illustrating the book's contents and facilitating its reading, and ends with 3 appendixes and several indexes.

The species were classified according to Ribaut; sometimes the names were subsequently updated following the work of other authors and are now written as so, because we respected the original editing without corrections or modifications. For the systematic placement we followed Nast's Checklist of Palaearctic Auchenorrhyncha. Posthumous nomenclatorial updatings have been made according to the Checklist of the species of the Italian fauna.

Of the collected specimens the kind of preparation is given (dry, in alcohol inside small glass test tubes capped with a cotton stopper and placed inside containers full of alcohol, in small plastic tubes, glass mounted), otherwise it is mentioned that they have not been preserved.

The main corpus of the volume deals with Typhlocybinae (in a systematic order), Appendixes 1 and 2 are in an alphabetic order. In the Appendix 1 there are the collections of new species or subspecies that Vidano had in his mind to study and eventually to describe. Vice versa the varieties, aberrations, forms, also if supposed new, are annotated in the remarks on the respective species in the "Typhl." of reference. In the Appendix 2 there are the collections of Auchenorrhyncha other than Typhlocybinae. The Appendix 3 is a list of the 90 papers on Auchenorrhyncha out of the 280 titles of Carlo Vidano's Opera Omnia.

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