the suggested age of the subfamily Triplicidentinae. It also emphasizes that the southernmost tip of the Afrotopical realm contains a biogeographically unique fauna. Aquatic biologists and limnologists usually collect only the larval stages of aquatic insects. It is generally assumed that those can be identified to species level. With specific identification it should be possible to assemble biological, ecological, and life-history information which could be used to develop precautionary conservation policies to be implemented when development projects are to be undertaken. Unfortunately, however, aquatic insects are usually only identifiable to species level from the adult stage. But in South Africa inadequate collecting has resulted in there being more larvae which can not be identified to species than adults which can be. The discovery of this trichopteran larva therefore also highlights the inadequacy of basic knowledge on South African aquatic biota and tells us that there is still a lot to be discovered through careful and diligent collecting. If South Africa, as signatory to the Rio Biodiversity Convention, is to meet its commitment to inventory its biodiversity by the year 2000, a much greater effort must be made to collect, study, and document this fauna. Every survey conducted over the last few years has led to the discovery of undescribed species.

Acknowledgments
Ms. Nikki Kohly is thanked for preparing the illustrations for this paper. Dr. O.S. Flint is thanked for providing me with information on numbers of Trichoptera species recorded from the Neartic and Neotropical regions. Dr. W. Wichard is thanked for information on Baltic amber Triplicidentinae. The Foundation for Research Development (FRD), the Anglo American and de Beers Chairman’s Fund, and Mosodi Forests are thanked for making funding available which enabled me to attend the Symposium at which this paper was presented.

Literature Cited


Scott, K.M.F., and F.C. de Moor. 1993. Three recently erected Trichoptera families from South Africa, the Hydrosalpingiidae, Pothriphiliidae, and Barbarocesthoniidae (Integripalpia: Sericostomatoida). With a cladistic analysis of the character states in the twelve families here considered as belonging to the Sericostomatoida. Annals of the Cape Provincial Museum (Natural History) 18: 293-354.


For the last 25 years, Moretti and collaborators have studied the Trichopteran fauna of the Nera at its most distinctive points from the source to the mouth. The first report was published by Moretti and Mearelli (1981). In this paper we present an update based on research carried out by us, H. Malicky (October, 1987) and undergraduate students (A. Bertoni, F. Guida, A. Fedele, O. Marchetti) with some information on symbionts of the larvae.
4200 km² extends over very permeable, calcareous, fissured rocks; therefore, both the surface and underground water give the Nera a regular flow throughout the year. Twenty-five km from the source, at Tripozzo, a sulphurous thermo-mineral spring (25°C), already famous in the Roman period for thermal treatment, flows into the river. The waters of the Velino River which feed Umbra Lake, flow into the Nera, at weekly intervals, via the Marmore Falls (165 m high) (Fig. 1).

The Nera river has been greatly modified by man; along the course there are now 6 hydroelectric stations and in the upper middle course there are 5 trout farms. The lower course, below Terni to the mouth, is polluted by industrial waste from steelworks and chemical and textile factories. There are also several gravel quarries, canals and dams.

**Sampling stations and environmental parameters**

In total, there were 21 sampling stations (Fig. 1) and they were divided into 6 longitudinal zones:
1. Station 1-2), rheocenous system (partially captured);
2. III (St. 3), hyporheal + epithelial; II (St. 4-7), metamitral with trout farms;
3. IV (St. 8-15), hyporheal with thermo-mineral spring;
4. V (St. 16), hyporheal influenced by Marmore Falls;
5. VI (St. 17-21), epipotamal modified by industrial waste.

The examination of several physico-chemical parameters expressed as averages of comparable data (that is, the same months between 1981-1995) shows that the values increase from source to mouth, with the exception of O₂, pH (Fig. 2). The most significant increases in water temperature are in III and V. The thermic margin between air and water temperature is greater in V and VI showing that water temperature is linked to hydric supply. The concentration of organic matter increases in V and VI, but never above 2.5 mg/l. The higher total hardness in V (45 French degrees) is caused by the temporary hardness of the water of the Marmore Falls. O₂ decreases significantly in V and VI because of pollution. The pH varies around 7.

**Results**

**Tricthoptera of the River Nera**

Up to the present the Trichopteran biocenosis is made up of 55 species and 6 subspecies, belonging to 15 families and 37 genera. Sixteen species are endemic to Italy. The Sørensen similarity index shows a high affinity between the contiguous zones I and II, III and IV, IV and V, and a low affinity between IV and V and VI (Table 1). The decrease in similarity index between IV and V is linked to the input from Marmore Falls.

The Nera, subject to periodic variations in level, has a biocenosis of a few resistant species with colonies of two Psychomyiidae (Timodes antonii, Lyra reducta) that are present in Lake Piediluco, which is subject to continuous variations in level. The decrease in similarity index between V and VI is also due to modifications by man: Tricthoptera cinerea and Criceta cinerea are found only in the upper course. Carassius vulgaris is endemic to the Apennine rivers because of continuous modifications of the environment by man. The supplies of friable water and the canals returning water from the hydroelectric stations renew the water course permitting even crenophilous species to reach the lower zones.

**Symbionts**

In the River Nera, 16 Trichoptera species have symbions. In Table 2, these are divided into epibionts and parasites. Thiothrichia, Peritrichia and some among the epibionts observed and Gregarinidin, Trematoda, Nematomorpha, and Nematormorpha among the parasites.

The research resulted in the following interesting findings:
1. Cysts of Nematomorpha were present, frequently in large numbers, on the mesenteron wall of almost all the larvae of the genus Rhizophyidae and in all the sampling stations where they were found.
2. While the Drassus cernuus collected in the springs of the Umbria-Marche Apennines did not have gregarina, those collected in the River Nera hosted Gregarina fontinalis.
3. At the sulphurous spring of Tripozzo, the larva of Allogamia assoniae and Odontoceram albicorn are covered with Thiothrichia, while the larvae of Hydrophylle and Hydrophylle are cloaked with Peritrichia which find ample nutrition in the bacteria present in the water.
4. It is interesting to note that gregarina Pomania moretti was present only in the larvae of Pomania moretti has a system of attachment to the intestinal wall which is so strong that it causes the death of the intestinal cells affected. Pomania moretti also hosts several other symbions, including sporocysts of Trematoda and cysts of Nematomorpha. The species most affected by infestation are P. inermis, O. albicornis and A. assoniae.
5. Allogamia assoniae is especially rich in sym-
Table 1. Division of the species found in the 6 zones of the River Nera. E = species endemic to Italy; + = species present only in one zone.

<table>
<thead>
<tr>
<th>Zones</th>
<th>Stations</th>
<th>I 1-2</th>
<th>II 3</th>
<th>III 4-7</th>
<th>IV 8-15</th>
<th>V 16</th>
<th>VI 17-21</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHYACOPHILIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Rhyacotheca albardana McL.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2. R. dorsalis subapicatae Moretti</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>3. R. foliacea Moretti</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>4. R. ritis Picket</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GLOSISOMATIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Glosisoma coniformis Neboiss</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>6. G. copus mignoni McL.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>7. Agoseta nimbus McL.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>HYDRICOTIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Oxytheria falcata Moretn</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>9. Hydropsyche angulata Mesely</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. H. insulicae Ris</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>11. H. martini Marshall</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>12. H. tenebrosa Dallman</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. H. vecia Curt.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Allottia pallicornis Eaton</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Tricholechiton japonicus Guinard</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHILOPTERIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Philopterus ludicinatus McL.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>17. Womwulda mediana McL.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. W. ocellata Picket</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HYDROPSYCHIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Hydropsyche dinarica Marinkovic</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. H. insulalis Curt.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>21. H. kieferi Tjader</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. H. modesta Navás</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. H. pelliculata Curt.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>POLYCENTROPTERIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Polycentropus conspicuus Curt.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>25. P. geniculatus corticusa Mesely</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>26. Polycentropus irroratus Curt.</td>
<td></td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. P. mortoni Mesely</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PSYCHODIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Psychomyia pusilla Fabr.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>29. Lyphophya sepia Steph.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. L. reducta Hagen</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>31. Timodex anisoni Bots. Vig.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. T. devens consiliori Bots.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>33. T. muscihali Kimmings</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECOIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Ecomenus tenellus Ramor</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 1. (continued)**

<table>
<thead>
<tr>
<th>Zones</th>
<th>Stations</th>
<th>I 1-2</th>
<th>II 3</th>
<th>III 4-7</th>
<th>IV 8-15</th>
<th>V 16</th>
<th>VI 17-21</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRACHYCENTRIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35. Brachyleptus sinuarius Curt.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. Microleptus minimus McL.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>37. M. montanus McL.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>38. M. seriferum dolinici Bots. Moretti</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>LIMNIPHYLIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. Drasus camerinus Moretti</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. Eclectopteryx guttulata Picket</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41. Limnephilus robustus resei Malicky</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42. L. robustus robustus L.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43. Potamophylax inermis Moretti &amp; Cianficoni</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>44. Halesus appenninus Moretti &amp; Spinelli</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>45. Stenophylax nittis McL.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46. S. permutus McL.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47. Microleptus sequus McL.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48. M. testaceus Griselin</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49. Metopophylax asperus Ramir</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>50. Allogysmus austriac Moertai</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>51. Cheumatopsyche guttata tommasi Moretti</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GYRINIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52. Sibis mediterranea autunniae Moretti</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>LEPIDOPTOMYTIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>53. Lepidoptoma birata Fabr.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>54. Lestocamphila basalis Kolenati</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>55. Cranoecia transitor Curt.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SERICOSTOMATIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56. Sericostoma cinnamomeum Moretti</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57. S. italicum Moretti</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>58. S. pedemontana McL.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>BERAENIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59. Berana mutra Curt.</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60. Beraneomyia squamosa Mesely</td>
<td>E</td>
<td>+</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ODONTOCEPHALIDAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61. Odontocephalus albicorne Scop.</td>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td></td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

Total species: 15 16 31 36 13 11

Similarity index: 71 58 74 36 16
Table 2. Trichoptera and their symbionts.

<table>
<thead>
<tr>
<th>Trichoptera</th>
<th>Epibionts</th>
<th>Parasites</th>
</tr>
</thead>
</table>
| Rhyacophila dorsalis subcuticulae | Gregarinaida: | Gregarinaida:  
Gregarinaida: Astigmaphora macrostoma: Lager  
Nematomorpha: cyst |
| Rhyacophila foliacea             | Gregarinaida: | Gregarinaida:  
Gregarinaida: Astigmaphora macrostoma: Lager  
Nematomorpha: cyst |
| Hydropteryx instabilis          | Gregarinaida: | Gregarinaida:  
Gregarinaida: Globiophylus hydropteryx: Beudoin  
Astigmaphora hydropteryx: Beudoin |
| Hydropteryx pellucidula         | Gregarinaida: | Gregarinaida:  
Gregarinaida: Globiophylus hydropteryx: Beudoin  
Astigmaphora hydropteryx: Beudoin |
| Polycentropus mortoni           | Gregarinaida: | Gregarinaida:  
Gregarinaida: Philocaphela sinuosa: Schneider  
Astigmaphora later (Kolliker) |
| Drasus camerenus                | Gregarinaida: | Gregarinaida:  
Gregarinaida: Greamerina fominis: Zuehlke |
| Limnephilus rhomb. rhombicus    | Gregarinaida: | Gregarinaida:  
Gregarinaida: Limnephilus: Zuehlke |
| Potamophylax inermis            | Gregarinaida: | Gregarinaida:  
Gregarinaida: Potamophylax inermis:  
Catastomis: Segratti  
Nematomorpha: apocyst  
Nematomorpha: cyst |
| Halesus appenninus              | Gregarinaida: | Gregarinaida:  
Gregarinaida: Astigmaphora: A.M. Beudoin |
| Micropterna sequax              | Gregarinaida: | Gregarinaida:  
Gregarinaida: Astigmaphora: Zuehlke  
Philocaphela lanceola: Beudoin |
| Stegophylax mitis              | Gregarinaida: | Gregarinaida:  
Gregarinaida: Astigmaphora: Zuehlke |
| Allogamus antonius              | Gregarinaida: | Gregarinaida:  
Gregarinaida: Greamerina limniphila: Zuehlke  
S. philodius: Zuehlke  
Philocaphela lanceola: Beudoin |

Table 2. (continued).

<table>
<thead>
<tr>
<th>Trichoptera</th>
<th>Epibionts</th>
<th>Parasites</th>
</tr>
</thead>
</table>
| Sericostoma italicum            | Gregarinaida: | Gregarinaida:  
Gregarinaida: Astigmaphora: A.M. Beudoin |
| Sericostoma pedemontanum        | Gregarinaida: | Gregarinaida:  
Gregarinaida: Astigmaphora: Zuehlke |
| Odontocerum albicorne            | Thiodobia: |
| Roflera: | Philodius sp. |
| Nematomorpha: | Gondius sp. |

bionts near the trout farms where the high density of the larval population favors reciprocal infestation.

6. Odontocerum albicorne has the greatest number of Gregarina species, sometimes in very high numbers (860 Proteozoa were counted on one specimen). Note the discovery of a gregarina which probably belongs to a new species of Astigmaphora. It is large, measuring 400 μm, and has a characteristic deutonemic hump.

Acknowledgement

Part of this research was supported by M.U.R.S.T. 60% grant.

Literature Cited


