

ODONATA OF THE STATE NATURE RESERVE 'ASTRONI CRATER' NEAR NAPLES, SOUTHERN ITALY

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Abstract – 18 spp., evidenced during 1986-1993, are listed; 8 of these are new for the Reserve.

Introduction

The first dragonfly records from the territory now included in the 'Astroni Crater' nature reserve come from Vincenzo R a g a z z i (1856-1929) (cf. D'ANTONIO, 1996), who reported the presence of *Coenagrion puella* and *Ischnura elegans* in May 1910. Several more species were subsequently added by various authors, viz. *Anaciaeschna isosceles* (BENTIVOGLIO, 1920), *Sympetma fusca*, *Coenagrion pulchellum*, *Ceragrion tenellum*, *Aeshna cyanea*, *Anax imperator*,

Sympetrum sanguineum (CONSIGLIO, 1953), *Chalcolestes viridis*, *Platetrum depressum* (CONCI, 1960), and *Trithemis annulata* (BATTAGLINI & PERCUOCO, 1967). During my 1986-1993 work on the local odonate community, 8 more species were evidenced.

Study area

The State Nature Reserve 'Astroni Crater' is a volcanic structure, which developed in about 1700 B.C. It is located in the Campi Flegrei area, W of Naples. It has an elliptical shape (axes 2000 and 1600 m), and a surface of some 247 ha. The climate is mediterranean, but the Crater shows a

peculiar phenomenon of vegetation inversion. The lowest part is covered with deciduous species, characteristic of the "submontane horizon" (*Castanea sativa*, *Quercus robur*, *Q. pedunculata*, *Ulmus campestris*, *Carpinus betulus*), while the upper part of the volcano and its inner slopes are characterised by mediterranean bush (*Q. ilex*, *Arbutus undedo*, *Pistacia lentiscus*, *Phillyrea variabilis*). Some allochthonous species are also present, viz. *Robinia pseudoacacia* and *Populus deltoides* (from North America), *Ailantus glandulosa* (from Asia), and *Q. borealis* (from northern Europe).

Within the crater, there are 3 small lakes with different ecological parameters:

- (1) LAGO GRANDE – is the largest and its surface has an irregular, quadrangular shape, which occupies an area of about 15000 m², its greatest depth is 6.5 m. The central part forms an island and is covered with *Salix capraea*. The lake margin is characterised by *Phragmites communis*, *Typha latifolia*, *Spartanium erectum*, *Juncus* sp., *Azolla filiculoides*, *A. caroliniana*, *Lemna trisulca*, *L. minor*, *Wolfia arrhiza* and *Nymphaea alba*.
- (2) COFANIELLO PICCOLO (or Lago di mezzo) – has a surface of 2000 m². Its shallower northern part is completely covered with *T. latifolia*, *Juncus* sp., *P. communis*, *S. erectum* and *Alisma plantago-aquatica*. The southern part (depth 1.1 m) is almost completely covered with *L. trisulca*, *L. minor* and *Riccia fluitans*. The muddy bottom consists of rotting vegetable matter.
- (3) COFANIELLO GRANDE – has a surface of some 1000 m² and a maximum depth of 0.7 m. Only a small surface area is free of vegetation, which consists essentially of *T. latifolia*, *S. capraea* (in the middle), *P. communis*, *Juncus* sp., *L. trisulca*, *L. minor*, *R. fluitans* and *A. caroliniana*. The bottom is muddy, with an abundance of decomposing material.

Since 1989, the Reserve is under the WWF Italia management.

Methods

The present study was carried out between spring 1986 and autumn 1993, and monthly inspections were conducted. Adult individuals were netted,

larvae were collected by qualitative dredge and also by examining the submerged vegetation. In accordance with the management principles of the WWF Oasis, the insects were released after identification.

Species list

In the below checklist, the information on flight period and, where applicable, the bibliographic references and brief annotations are provided for each species.

- *Chalcolestes viridis parvidens* (Artobol.) – CONCI (1960); mid VI - early XI.
- *Sympecma fusca* (Vander L.) – CONSIGLIO (1953); mid VI - early IX.
- *Ceriatrion tenellum* (de Vill.) – CONSIGLIO (1953); early VI - mid IX.
- *Coenagrion puella* (L.) – CONSIGLIO (1953), D'ANTONIO (1996); mid V - early IX.
- *C. pulchellum* (Vander L.) – CONSIGLIO (1953) recorded a single ♂ (2-VI-1950), but the species has not been sighted ever since.
- *Erythromma viridulum* (Charp.); mid VII - early IX.
- *Ischnura elegans* (Vander L.) – CONSIGLIO (1953), D'ANTONIO (1996); early V - end IX.
- *Aeshna cyanea* (Müll.) – CONCI (1960) collected some larvae in the irrigation wells (25-VIII-1955); not recorded since that date.
- *A. mixta* Latr.; end VII - mid XI.
- *Anaciaeschna isosceles* (Müll.) – BENTIVOGLIO (1920), CONSIGLIO (1953); early V - early VIII.
- *Anax imperator* Leach – CONSIGLIO (1953); early V - early X.
- *A. parthenope* (Sel.); early V - early IX.
- *Crocothemis erythraea* (Brullé); early V - mid X.
- *Orthetrum brunneum* (de Fonsc.); end V - mid IX.
- *Platetrum depressum* (L.) – CONCI (1960); mid V - early X.
- *Sympetrum meridionale* (Sel.); mid VII - end IX.
- *S. sanguineum* (Müll.) – CONSIGLIO (1953), CONCI (1960); end VII - early XI.
- *S. striolatum* (Charp.); end VI - early XI.
- *Tametrum fonscolombii* (Sel.); mid V - early X.
- *Trithemis annulata* (P. de Beauv.) –

BATTAGLINI & PERCUOCO (1967); mid V - early XI.

Discussion

Currently, the odonate fauna of the Reserve consists of 18 species, representing 34% of the fauna of Campania. During the 7 years of our work, the presence of the earlier recorded *C. pulchellum* and *A. cyanea* could not be confirmed. On the other hand, 8 species are new for the Reserve, viz. *E. viridulum*, *A. mixta*, *A. parthenope*, *C. erythraea*, *O. brunneum*, *S. meridionale*, *S. striolatum* and *T. fonscolombii*.

Between January and May 1993, the dense growth of *Phragmites communis* in the Lago Grande was cut and the free surface area increased greatly. This human intervention has been useful and the biological response positive and immediate. The number of migrant bird species and

that of the sighted dragonfly species, as well as the strength of the odonate population have been in 1993 higher than the year before.

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References – BATTAGLINI, P. & G. PERCUOCO, 1967, *Boll. Soc. Nat. Napoli* 76: 229-236; – BENTIVOGLIO, T., 1920, *Atti Soc. Nat. Mat. Modena* 5(51): 24-26; – CONCI, C., 1960, *Memorie Mus. civ. Stor. nat. Verona* 8: 89-99; – CONSIGLIO, C., 1953, *Memorie Soc. ent. ital.* 31: 96-108; – D'ANTONIO, C., 1996, *Opusc. zool. flumin.* 143: 1-10.

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