DRAGONFLIES RECORDED FROM THE GAMBIA

R.M. GAMBLES [deceased], N.W. MOORE[1], M. HÄMÄLÄINEN[2] and E.D.V. PRENDERGAST[3]
[1] The Farm House, 117 Boxworth End, Swavesey, Cambridge CB4 5RA, United Kingdom
[2] Department of Applied Zoology, P.O. Box 27, FIN-00014 University of Helsinki, Finland
[3] Manor House, Bagber, Sturminster Newton, Dorset DT10 2EY, United Kingdom

Abstract – 64 spp. recorded from The Gambia up to end 1989 are listed, and their known distribution shown.

Introduction

The Gambia is a narrow strip of territory bounded on all sides, except for its Atlantic coastline, by Senegal, and consists of little more than the river, which pursues a somewhat meandering course from east to west; and the land on either side of it to an average distance of 20 km near the mouth, narrowing to 10 km up-river. The ground is, for the most part, flat, and there are hardly any tributaries to the river. It is tidal for much of its length, and brackish as far as Kuntaur. The lower reaches are fringed with mangrove swamp with numerous brackish creeks. Within The Gambia, the river has no rapids or waterfalls. Thus suitable habitats for many widespread groups of dragonflies are absent, and no species of Chlorocyphidae, Calopterygidae or Zygonyx have been found. Over the ricefields, adjoining the river, on the other hand, many of the marsh-loving species are abundant. Whereas in the 1940s, there were still considerable areas of riverine forest, particularly up-river, today there is little left.

Compared with those of southern, eastern and parts of Central Africa, the dragonflies of West Tropical Africa have received very little attention. However, reports on collections made and lists of species are to be found in the literature of most West African Territories, except for The Gambia. Though the male holotype of *Phyllogomphus aethiops*, (now in the Natural History Museum, London) came from the River Gambia (SELYS, 1854; FRASER, 1957), the country appears to have been otherwise almost completely neglected until 1948. References have been found to only four other species. Accordingly, as the present authors have visited the country briefly at different times to study its dragonflies, it seems desirable to publish a list of the species found there so far. Doubtless this list could be expanded considerably by systematic collecting in all parts of the country and at all times of year; but, as it stands at present, it should put our knowledge of the Gambian Odonata at least on a par with that of most other West African Territories.

Collecting Visits

NWM spent two months, from mid-July to mid-September 1948, in The Gambia collecting mainly around Kuntaur, some 200 km up-river, but also around Banjul and Basse Santa Su. In September 1958, RMG was able to land from the mail boat on which he was travelling, for about an hour's collecting in the neighbourhood of Banjul. In October-November 1980, he spent three weeks on a collecting holiday in The Gambia. He was based mainly at Fajara about 16 km west of Banjul, but he also made a three day trip up-country collecting in the sort of terrain worked by NWM. RMG was later sent, for identification, the specimens collected by two short expeditions in 1977 by the University of Lund, Sweden. He noted that they largely confirmed his own observations, but provided some new data on distribution. MH based in Bakau collected at various sites within the Lower Sector during two weeks in December 1980, and EDVP was leader of the British Dragonfly Society party which visited the country from 26 September to 10 October 1989. This party was based on the coast just south of Fajara, but spent two nights at Tendaba, about 100 km up-river. A few records come from other sources, including D.A. Davidson who visited in 1974 and specimens sent to EDVP by his contacts in The Gambia in 1988/89.

Results

As a preliminary to mapping the distribution of the various species of Odonata throughout the country, the map has been divided into 10 km squares, conforming with those of UTM Grid Zone 28, and numbered arbitrarily from 1 to 162, as on Figure 1. This figure also shows an unoffi-

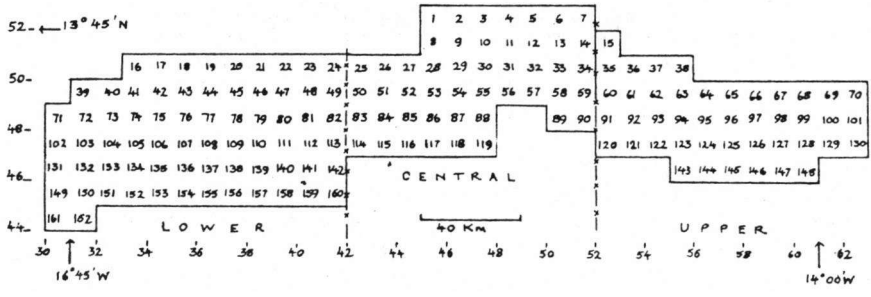

Fig. 1. The Gambia. Arbitrarily numbered 10 km squares plotted against U.T.M. Zone 28 grid.

cial division of the country, from west to east, into three sectors, each about 110 km in length, but containing different quantities of squares - the western Lower Sector, from the Atlantic coast up to the 42 eastings, just upstream from Tendaba (70 squares); the Central Sector, from here past Kuntaur to the 52 eastings (49 squares); and the eastern Upper Sector, from just west of Georgetown, past Basse Santa Su to the frontier (43 squares).

Species recorded up to the end of 1989, by sectors, were:

LESTIDAE
- *Lestes ochraceus* Sel.: Lower: 39, 73
- *L. pallidus* Ramb.: Lower: 39, 133, 161; – Central: 9; – Upper: 126

PROTONEURIDAE
- *Elattoneura nigra* Kimmins: Central: 33; – Upper: 126

PLATYCNEMIDIDAE
- *Mesocnemis dupuyi* Legrand: Central: 33; – Upper: 126
- *Platycnemis congolensis* Martin: Lower: 73
- *P. sikassoensis* (Martin): Lower: 73; – Central: 14; – Upper: 126

COENAGRIONIDAE
- *Aciagrion attenuatum* Fraser: Lower: 73, 142
- *Agriocnemis exilis* Sel.: Central: 14, 33; – Upper: 126
- *A. maclachlani* Sel.: Lower: 73; – Central: 14
- *A. victoria* Fraser: Lower: 73; – Upper: 126

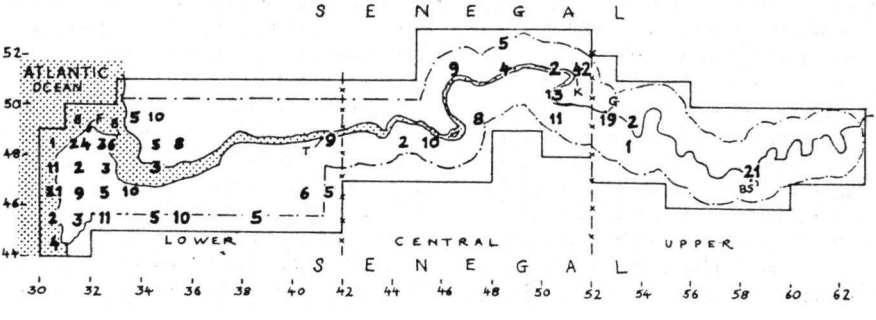

Fig. 2. The Gambia. National boundaries, course of river, principal towns (B=Bunjal, – BS=Basse Santa Su, – F= Fajara, – G=Georgetown, – K=Kuntaur, – T=Tendaba), and division into sectors; together with number of species of Odonata recorded in each 10 km square.

- *A. zerafica* Le Roi: Lower: 73, 150; – Central: 14, 58; – Upper: 60
- *Ceriagrion glabrum* (Burm.): Lower: 42, 72, 73, 76, 82, 102, 106, 131, 134, 141, 150, 151, 154; – Central: 86
- *C. moorei* Longfield: Lower: 73, 132; – Central: 4, 9, 14, 33; – Upper: 60, 61
- *Enallagma vansomereni* Pinhey: Lower: 72
- *Ischnura senegalensis* (Ramb.): Lower: 39, 72, 73, 102, 131, 142, 161; – Central: 14, 55, 86; – Upper: 60
- *Pseudagrion angelicum* Fraser: Lower: 73
- *P. hamoni* Fraser: Central: 14; – Upper: 60
- *P. nubicum* Sel.: Central: 14, 33, 58; – Upper: 60, 126
- *P. sjoestedti nigeriense* Gambles: Central: 14; – Upper: 60, 126
- *P. sudanicum* Le Roi: Upper: 126

GOMPHIDAE

- *Gomphidia* sp.: Central: 13
- *Neurogomphus* sp. (? *featheri* Pinhey): Central: 13, 33; – Upper: 60
- *Phyllogomphus aethiops* Sel.: coastal region (exact locality unrecorded).

AESHNIDAE

- *Anax tristis* Hagen: Lower: 73; – Central: 14; – Upper: 92
- *Heliaeschna lanceolata* Le Roi: Lower: 73; – Central: 14
- *Hemianax ephippiger* (Burm.): Lower: 102, 131, 151; – Central: 14, 55

CORDULIIDAE

- *Macromia bifasciata* (Martin): Central: 11, 14

LIBELLULIDAE

- *Aethriamanta rezia* Kirby: Central: 14, 33
- *Acisoma panorpoides inflatum* Sel.: Lower: 42,72, 73, 76, 131, 132, 150, 151, 153, 154; – Central: 4, 9, 14, 55, 58; – Upper: 60
- *A. trifidum* Kirby: Lower: 73, 102
- *Brachythemis lacustris* (Kirby): Central: 14
- *B. leucosticta* (Burm.): Lower: 41, 72, 154; – Central: 11, 14, 33, 55, 58, 86; – Upper: 60
- *Chalcostephia flavifrons* Kirby: Lower: 72, 73, 102, 131, 151; – Central: 14; – Upper: 126
- *Crocothemis erythraea* (Brullé): Lower: 39, 41, 42, 71, 72, 73, 75, 76, 82, 102, 104, 131, 132, 134, 149, 151, 153, 154, 157; – Central: 9, 14, 55, 58, 86; – Upper: 60, 61, 126
- *Diplacodes lefebvrei* (Ramb.): Lower: 39, 41, 42, 72, 73, 76, 82, 102, 103, 131, 132, 134, 141, 142, 149, 151, 153, 154; – Central: 4, 9, 14, 55, 86; – Upper: 60, 126
- *Hemistigma albipuncta* (Ramb.): Lower: 39, 42, 72, 73, 76, 82, 106, 131, 132, 141, 151, 154; – Central: 4, 9, 14, 33, 58, 86; – Upper: 60
- *Olpogastra lugubris* Karsch: Central: 11, 14
- *Orthetrum africanum* (Sel.): Lower: 72; – Central: 14
- *O. angustiventre* (Ramb.): Lower: 41, 72, 73, 103, 161; – Central: 11, 14, 33
- *O. brachiale* (P. de Beauv.): Lower: 42, 72, 73, 131, 134, 141, 142, 154, 157; – Central: 14, 33, 86; – Upper: 126
- *O. chrysostigma* (Burm.): Lower: 75, 76, 104
- *O. icteromelan* Ris: Lower: 72, 73, 131, 132; – Central: 4, 9, 14, 33, 55; – Upper: 60, 126
- *O. kalai* Longfield: Lower: 72, 73, 131, 133; – Upper: 60
- *O. monardi* Schmidt: Lower: 72, 73, 133, 134, 154; – Central: 58, 86; – Upper: 60, 126
- *O. trinacria* (Sel.): Lower: 72, 73, 131, 157; – Central: 14
- *Oxythemis phoenicoscelis* Ris: Upper: 126
- *Palpopleura deceptor* (Calv.): Lower: 42, 72, 73, 75, 131, 133, 134, 141, 154, 157, 161; – Central: 14, 58, 85; – Upper: 60, 126
- *P. lucia* (Dru.): Lower: 72, 73, 131, 132, 151, 153; – Central: 14, 58; – Upper: 60
- *P. portia* (Dru.): Lower: 42, 72, 73, 76, 82, 102, 104, 131, 132, 134, 141, 151, 153, 154, 157; – Central: 14, 58; – Upper: 60, 126
- *Pantala flavescens* (Fabr.): Lower: 41, 42, 72, 73, 75, 76, 82, 102, 106, 131, 133, 134, 142, 151; – Central: 14, 58, 85, 86
- *Parazyxomma flavicans* (Martin): Lower: 73; – Central: 14
- *Philonomon luminans* (Karsch): Lower: 75, 131, 134; – Central: 14
- *Rhyothemis notata* (Fabr.): Lower: 73; – Central: 14
- *R. semihyalina* (Desj.): Lower: 102, 131; – Central: 14
- *Sympetrum navasi* Lacroix: Central: 14
- *Tetrathemis bifida* Fraser: Lower: 131
- *Tholymis tillarga* (Fabr.): Lower: 72, 73, 82, 132, 151; – Central: 14; – Upper: 126
- *Tramea basilaris* (P. de Beauv.): Lower: 42, 73, 82, 102, 131, 134; – Central: 14, 86; – Upper: 126

- *Trithemis annulata* (P. de Beauv.): Lower: 39, 72, 73, 82; – Central: 9, 14, 33, 55; – Upper: 60
- *T. arteriosa* (Burm.): Lower: 72, 73
- *T. grouti* Pinhey: Lower: 73, 131; – Central: 14
- *T. imitata* Pinhey: Lower: 39
- *Urothemis assignata* (Sel.): Central: 14
- *U. edwardsi* (Sel.): Lower: 72; – Central: 9, 14; – Upper: 126

RMG, who compiled the basic list of species which had been found in The Gambia, did not always agree with other taxonomists about certain species. In particular, he considered *Palpopleura lucia* and *P. portia* to be separate species, contrary to some other opinions. Similarly, his ideas differed from those who considered *Orthetrum kalai* a synonym or sub-species of *Orthetrum brachiale* (Pinhey, 1970); *Acisoma panorpoides inflatum* a synonym of *A. p. ascalaphoides* Rambur (Pinhey, 1961); and *Aciagrion attenuatum* only a sub-species of *A. gracile* (Sjöstedt) (Pinhey, 1972). For the purpose of this paper, in deference to RMG, his nomenclature has been retained.

In a country so under-worked, little would be gained by showing a distribution map for each species. Instead, Figure 2 shows, against a background of a map of the country, how many species have been recorded in each 10 km square. It must be emphasized that the figures are much more a reflection of observer effort than of the probable distribution of the species. Nevertheless, there are indications of some tendencies; for example, whilst *Ceriagrion glabrum* is widespread in the Lower Sector, it appears to be largely replaced by *C. moorei* as one proceeds up-river. Similarly, the conspicuous *Brachythemis leucosticta* seems to be commoner in the Central Sector than downstream. However, even these tentative conclusions should be regarded with caution, since further surveys of new locations, and at times of year not yet covered, are bound to modify the patterns of distribution so far observed.

Conclusion

Up to end 1989, 64 species of Odonata - 22 of them (35%) in all three sectors - have been recorded from The Gambia. This compares with 245 species known from Nigeria and 130 from the Ivory Coast, countries with a very much greater diversity of habitats. No endemic species have been discovered but, besides *Phyllogomphus aethiops* mentioned above, another species, *Ceriagrion moorei*, has its type locality in The Gambia, having been found by NWM in 1948. Both species have proved to be widespread in Africa.

It is likely that a few further species will be added to the Gambia list, once the Upper Sector, in particular, is adequately surveyed; as several non-Gambian species have already been recorded just over the border in Senegal.

References – FRASER, F.C., 1957, *Revue Zool. Bot. afr.* 56: 9-32; – GAMBLES, R.M., N.W. MOORE & M. HÄMÄLÄINEN, no date, *Annotated list of Odonata from the Gambia up to end 1980*, Mus. Nat. Hist., London [unpublished manuscript]; – LONGFIELD, C., 1952, *Proc. R. ent. Soc. Lond.* (B)21: 41-48; – PINHEY, E.C.G., 1961, *A survey of dragonflies (order Odonata) of eastern Africa*, Brit. Mus. (Nat. Hist.), London; – 1970, *Occ. Pap. natn. Mus. Sth. Rhod.* (B)4(30): 261-321; – 1972, *ibidem*, 5(1): 1-59; – SELYS LONGCHAMPS, E. de, 1854, *Bull. Acad. Belg.* 21(2): 23-112.

Received March 6, 1995