The major studies of benthic communities in West Africa have been mostly limited to standing waters and large rivers. The benthic fauna of the Volta Lake was studied by Petr (1969), of Lake Bosomtwe in Ghana by Whyte (1975), Kariba Lake in Nigeria by McLachlan (1965, 1969), and Lake Chad by Dejoux (1968) and Hopson (1967).

Some chironomid records from various parts of Ghana can be found in Amakye (1993). Thomas (1966) recorded 17 species of chironomids from a small man-made lake, Petr (1970) reported 52 species of chironomids from the Volta Lake, while Whyte (1971) studied the ecology of chironomids in a small tropical man-made lake, the Danfa reservoir and recorded 69 species. The chironomid larvae collected by Hynes (1972) were identified only to the subfamily level. Whyte (1980) in his studies from all over Ghana recorded 34 species of chironomids. According to Amakye (1993) 87 species in 31 genera belonging to 3 subfamilies had been recorded from Ghana by 1993. The subfamilies were represented by 12 species (14%) of Tanypodinae, 6 species (7%) of Orthocladiinae and 69 species (79%) of Chironominae.

Up till now little has been published on the Afrotropical species of Rheotanytarsus from the Afrotropical region are given and the zoogeography discussed. The genus as a whole probably originated at the very end of the fragmentation of Pangaea. The Afrotropical species show warm / eurythermal vicariant Gondwanan patterns with multiple sister group relationships between the Afrotropical and the Sino-Indian region, African – West Palaearctic vicariance patterns, and limited evidence for West African – Brazilian vicariance patterns.

The genus has been recently divided into 21 species groups of which 10 have Afrotropical representatives, namely the pentapoda, acuminatus, photophilus, globosus, pellucidus, guineensis, trivittatus, ororus, phaealae and phaeatus groups. Keys to males, females and pupae of Rheotanytarsus from the Afrotropical region are given and the zoogeography discussed. The genus as a whole probably originated at the very end of the fragmentation of Pangaea. The Afrotropical species show warm / eurythermal vicariant Gondwanan patterns with multiple sister group relationships between the Afrotropical and the Sino-Indian region, African – West Palaearctic vicariance patterns, and limited evidence for West African – Brazilian vicariance patterns.

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species and new records are from Tanzania, Uganda, Gabon, South Africa, Senegal, Nigeria and Kenya.

World-wide, 94 species of Rheotanytarsus have been described, 26 from the Palearctic region, 9 species from the Australian region, 25 species from the Oriental regions, 19 species from the Neotropical, 21 species from the Afrotropical region and 4 species from the Nearctic region (Kyerematen & Sæther 2000). Some of the species occur in more than one region.

The larvae of the genus Rheotanytarsus live in flowing waters and also occur in the wave swept littoral zones of lakes, where they live as filter feeders using nets suspended between arms at the anterior end of the cases (see e.g. Thienemann 1954, Kullberg 1988).

Sæther & Kyerematen (2000) did a phylogenetic analysis of the genus arriving at a preferred cladogram with twenty-one species groups. Area cladograms both of the genus as a whole and of the major separate groups were erected, and geographic coevolutionary analysis, and ancestral area analyses performed.

METHODS, MORPHOLOGY AND TERMINOLOGY

Morphological nomenclature follows Sæther (1977, 1980) with the additions mentioned in Sæther (1990a, b). The broad flattened setae of the pupal exuviae are called taenia(e) in accordance with Langton (1994).

MATERIAL

The material examined mostly consists of Ghanaian specimens of Rheotanytarsus collected during the NUFU programme. In addition, specimens from Tanzania, collected during an expedition by the Museum of Zoology, University of Bergen, to Northeast Tanzania in 1990 as well as material from Gabon and specimens of R. ceratophylli Dejoux from Senegal lodged in the Museum (ZSM) have been examined. In addition material from the collections of A. D. Harrison, South Africa (ADH), P. H. Langton, Northern Ireland (PHL) and J. Mobayed, France (JM) were examined.

From Institut Royal des Sciences Naturelles de Belgique (IRSN), Brussels, two specimens of R. angustus as well as four specimens misplaced as R. angustus (Freeman) were examined, and one specimen of the same species from Musée Royal de l’Afrique Centrale, Tervuren, Belgium (MRAC) was also examined. From The Natural History Museum, London (BMNH) 15 Rheotanytarsus specimens from Africa were borrowed and examined; most misplaced as R. guineensis Kieffer, R. fuscus (Freeman) and R. angustus (Freeman). Also examined was material from Zoologisches Staatssammlung, Munich, Germany (ZSM). This consisted of two specimens of R. montanus and one specimen of R. ororus Lehmann from D. R. Congo, used in the descriptions below, two specimens of R. angustus (Freeman) from South Africa, 1 specimen of R. guineensis Kieffer from Kenya, and one specimen of a new species from D. R. Congo.

The holotypes of the new species are deposited at the Museum of Zoology, University of Bergen (ZMBN) or at The Natural History Museum (British Museum), London, England (BMNH). Paratypes are deposited at the Zoology Department, University of Ghana, Legon, Accra (ZDUG); Zoologisches Staatssammlung, Munich (ZSM); The Natural History Museum (British Museum); R. M. Bohart Museum of Entomology, Davis, California (RMB); the collection of Peter Langton, Coleraine, Londonderry, Northern Ireland; and the Museum of Zoology, University of Bergen, Bergen (ZMBN).

LOCALITIES

Collections of the insects were made from various localities in Ghana and Rheotanytarsus spp. were taken in seven localities:

Agumatsa Stream originates in Togo and runs southwards through the Agumatsa Wildlife Sanctuary in the Wli area in the Volta Region of Ghana. The upper parts of the river have two large cascades and is rather fast flowing with stone and gravel as bottom substrate. In this section the river is approximately 5 m wide and quite shallow. Further downstream the river is flowing more slowly and the bottom material consists of sand and mud. According to Hall & Swaine (1981) the forests in the area belong to the Dry Semi-Deciduous Fire Zone subtype. The sanctuary is surrounded by steep-sided hills, the upper levels of which are covered by savannah woodland, while the bottom of the riverain valleys are covered by dense moist semi-deciduous forest. Mean annual rainfall exceeds 1500 mm especially in the higher hills in the Volta Region (Hall & Swaine 1981).

Ankasa Game Production Reserve is located in the south western corner of Ghana in the Western Region close to the Ghana-Ivorian border. This part of Ghana lies within the Wet Evergreen forest type (Hall & Swaine 1976). The area has an annual rainfall in excess of 1750 mm and in some places even higher than 2000 mm (Hall & Swaine 1981). Many streams and small rivers run through the reserve, both rather fast flowing with stony substratum and more slow flowing with muddy or sandy substratum.

Boti Waterfalls is located in the Eastern Region of Ghana and lies within the Moist Semi-Deciduous southeast subtype (Hall & Swaine 1976). Annual rainfall in this area is between 1200 and 1800 mm. The Boti River cascades down into a ravine from where it continues down the valley. The trappings were done below the waterfall. Here the river forms a