

NOTES ON THE TRUE IDENTITY OF *NESCIOTHEMIS ERYTHRA*
(PINHEY, 1966) AND THE DISTRIBUTION OF *N. NIGERIENSIS* GAMBLES,
1966 (ANISOPTERA: LIBELLULIDAE)

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Nesciothemis erythra (Pinhey) is shown to be synonymous with *N. nigeriensis* Gambles. The recorded distribution of *N. nigeriensis* lies within the West African savanna belt, but includes only five major localities. It is anticipated that the creation of artificial lakes will result in the establishment of many more colonies in West Africa.

NESCIOTHEMIS NIGERIENSIS GAMBLES, 1966

Synonymy: *Nesciothemis erythra* (Pinhey, 1971), syn. nov.; – *Limnetothemis erythra* Pinhey, 1966

Nesciothemis nigeriensis was described by GAMBLES in July 1966 from a single male taken by him at Agulu Lake, Awka, Nigeria in December 1961. The species was not noted again until PARR & PARR (1972) reported three colonies in the Zaria region of northern Nigeria in 1972.

In 1966 (October) PINHEY described *Limnetothemis erythra*, a new genus and species of libellulid from the Parc National de la Garamba, N. Congo (now Zaire). *Limnetothemis erythra* was described from a single male which was deposited in the Institut Parcs Nationaux, Tervueren, Bruxelles, Belgium. Although PINHEY (loc.cit.) pointed out that the hamulus, being robust with a well developed hook, resembled that of the *Orthetrum-Oxythemis* group, he placed the new genus close to the large genus *Trithemis* Brauer and the Mauritian *Thalassothemis* Ris. The synthorax of *Limnetothemis erythra* was described as having a bright yellow stripe on the median carina. As GAMBLES (pers. comm.) pointed out, this is a characteristic of immature specimens of

most species of *Nesciothemis* and *Oxythemis*. Gambles further suggested that when immature examples of his *Nesciothemis nigeriensis* were discovered they would probably bear a similar yellow stripe. Pinhey's description of *L. erythra* indicated that the abdomen was almost completely orange red (segments 1-3) or reddish (segments 4-9), with segment 10 being ferruginous. The first reference to *Limnetothemis erythra* is in PINHEY (1964), but as his 1966 description was in the press at that time he simply refers to it as a manuscript name, without a description or figures. In this 1964 paper PINHEY mentions the specimen obtained by Aguesse on 3 June 1963, and notes that it differs from the type in being pruinosed.

In a later publication, PINHEY (1971) provided a key to the species of *Nesciothemis* and he re-assigned his *Limnetothemis erythra* to that genus, as *erythra* has accessory genitalia resembling the other known species of *Nesciothemis*.

AGUESSE (1968) reported on a collection of Odonata taken in May and June 1963, in Sierra Leone. One of the more interesting species he listed was *Limnetothemis erythra* Pinhey (in litt.), which he mentions as having a bi-coloured red and blue abdomen, which enables it to be distinguished from *Orthetrum* species when flying. AGUESSE (pers. comm.) has confirmed that his specimen of *L. erythra* did, in fact, have a red and blue abdomen, not all red.

Ecological and behavioural studies on two colonies of *Nesciothemis nigeriensis* in Zaria, northern Nigeria (PARR & PARR, 1974) have shed considerable light on the relationship between that species and *N. 'erythra'*. By means of marking and capture-recapture, it became clear that immature *N. nigeriensis* agree well with the original description of *Limnetothemis erythra* Pinhey, 1966, having a ferruginous synthorax with a dorsal yellow stripe and an abdomen which is reddish (segments 1-3), and brownish-orange (segments 4-10), although there is some variation with age. Examination of the fragmented holotype of *L. erythra* in the Institut Parcs Nationaux, Tervueren, has confirmed the synonymy of *Nesciothemis nigeriensis* and *N. erythra*. With reference to the preliminary key (PINHEY, 1971) to mature males of *Nesciothemis*, it should be noted that the degree to which the frons and vertex exhibit a violet sheen seems to depend primarily on age, it being better developed in young individuals. The length of the pterostigma is variable, but is usually around 3.5-4.0 mm.

N. nigeriensis has now been recorded from the following localities: Makeni (Sierra Leone); the greater Zaria area (N. Nigeria); near Mokwa (west-central Nigeria); Awka (S. Nigeria) and Garamba (N. Zaire). The locality near Mokwa (in North-Western State, Nigeria) is Lake Tatabu (GAMBLES, pers. comm., 1974). Lake Tatabu, which lies in the flood plain of the river Niger, is about 20 kilometers from Mokwa and is readily accessible from the Mokwa-Jebba

main highway. Gambles recently determined a single male from this lake taken by P.H. Ward on 15 August, 1970. At this time (WARD, pers. comm.) the lake level was high and tall grasses were growing very close to the water's edge, but he saw no other specimens of *N. nigeriensis*. When I visited Lake Tatabu on 31 July, 1973, the water level was very low and a great deal of dry mud was exposed around the margins. Judging from the other known localities for the species, Lake Tatabu was at this time unsuitable for it (there were no emergent grasses) and no specimens of *N. nigeriensis* were seen. These localities are all more or less in the broad West African savanna belt (the type locality, Awka, is in fact, near to the dividing line between the savanna and rain forest belts).

Observations at colonies of *N. nigeriensis* in Nigeria by the present author indicate that the species requires lakes with a good growth of emergent grasses (especially *Echinochloa pyramidalis*) around shallow margins. Until recently, suitable lakes were not common in the Nigerian savanna. The relatively recent discovery of such a conspicuous libellulid suggests that until the last few years *N. nigeriensis* was an exceedingly local insect. The creation of numerous suitable habitats by damming intermittent savanna streams for reservoirs may be expected to result in the establishment of many more colonies, at least in Nigeria (PARR & PARR, 1974). Further ecological studies of this libellulid, the continued monitoring of its known habitats and the search for other breeding sites which presumably exist, would throw a great deal of light on the ability of certain organisms to very rapidly exploit favourable new or changing environments.

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