

THE OCCURRENCE AND HABITAT OF
OREOCNEMIS PHOENIX PINHEY IN
MLANJE MOUNTAIN, MALAWI (ZYGOP-
PTERA: PLATYCNEMIDIDAE)

The new genus and species *Oreocnemis phoenix*

Pinhey (E.C.G. PINHEY, 1971, *Arnoldia, Rhod.* 5 (9): 1-5) was described from a series of specimens collected by members of Falcon College, Rhodesia (now Zimbabwe), who mounted an expedition to Mlanje Mountain, Malawi, in December 1970. The species was also recorded, by J.A. Whelan in November 1972 (E.C.G. PINHEY, 1979, *Arnoldia, Rhod.* 8 (38): 1-14), from the Chambe Plateau of Mlanje Mt. Mlanje Mt. remains the only known site for *O. phoenix*. E.C.G. PINHEY (1982, *Rep. Odon. Specialist Group Int. Un. Conserv. Nat.* 2: 1-4) indicates that his list of little known or vanishing Afrotropical Odonata is a selection (not including *O. phoenix*) and a warning that research into possible localities is desirable before they deteriorate. This short report, therefore, provides further information on the status of this very imperfectly known genus and species.

The isolated massif of Mlanje Mt. in the extreme southeastern corner of Malawi attains a maximum altitude of 3013 m (Sapitwa peak) and there are several other prominent peaks in the range 2500-3000 m projecting from the plateau which lies between 1800 and 2200 m. The massif is characterised by impressive escarpments which delimit it from the surrounding plain.

Five collecting expeditions to Mlanje were organised by the author: in April, August and November, 1976; and April and June, 1977. On each of these visits, lasting 3-4 days, a particular effort was made to locate *O. phoenix*. The period 13-15 November 1976 was spent in the area known as the Tuchila shelf, close to the north-western scarp of the mountain, at an altitude of about 2000 m. *O. phoenix* was found to be present in large numbers on several small streams (0.5-2 m wide) close to the Tuchila Forestry Hut and on a main tributary of the Likulezi River (up to 4 m wide) about 800 m north-east of the Hut. These parts of the streams are all situated on the plateau of the mountain. No *O. phoenix* were seen on the steeper scarp faces of the mountain or on the higher reaches beyond the plateau level. The stream where *O. phoenix* was most plentiful were in rocky areas where the water runs fast over a rocky stream bed but where there are occasional small, but deep pools. The species avoided long, deep and still stretches of river. The water temperature of

the streams frequented by the damselflies varied from 15-18°C in different areas, and the maximum shade air temperature was about 21°C. The vegetation of the main *O. phoenix* habitat is described by J.D. CHAPMAN & F. WHITE (1970, *The evergreen forests of Malawi*, Commonwealth Forestry Institute, Oxford) as being upper altitude grassland. These grasslands are regarded as having been recently derived from forest due to the influence of fire and clearance by Man. The main forest components were probably bamboo (*Arundinaria alpina* K. Schum.), cedar (*Widdringtonia cupressoides* (L.) = *W. whytei*), junipers (*Juniperus* spp.) and various aromatic shrubs, remnants of which exist in several areas on Mlanje. The reference (E.C.G. PINHEY, 1978, Odonata. In: M.J.A. Werger & A.V. Van Bruggen, [Eds], *Biogeography and ecology of Southern Africa*, pp. 723-731, Junk, The Hague) to *O. phoenix* occurring in montane forest is, therefore, possibly misleading. No specimens were observed in true forest, but always in relatively open or very open areas. *O. phoenix* was seen to rest on a variety of surfaces: rocks, twigs, grass and shrubs were all used by males in the vicinity of the streams.

On 15 November 1976, at the last section of the Likulezi R. tributary before the falls on the edge of the escarpment, a pair of *O. phoenix* were seen in tandem on a leaf of a young *Vellozia* spp. The *Vellozia* shrub was about 0.5 m tall and was growing on the richly vegetated bank of the stream (Fig. 2). The female was observed to oviposit in the leaf surface for 24 min. before the pair separated and both flew off. The eggs were laid longitudinally in slit-like incisions in a young leaf. The whole leaf was taken back to the laboratory but the eggs failed to hatch before the leaf died and the eggs subsequently died. It is unlikely that *Vellozia* is the main oviposition site since this plant only rarely grows very close to the stream banks.

O. phoenix, which bears a close general resemblance in the field to the European coenagrionid *Pyrrhosoma nymphula*, was flying in company with *Ischnura senegalensis* (Ramb.), *Pseudagrion kersteni* (Gerst.), *Anax speratus* Hag., *Orthetrum abbotti* Calv. and *Atoconeura biordinata* Karsch. In addition, *Orthetrum julia falsum* Longfield, *Pantala flavescens* (Fab.) and *Tramea basilaris* occurred

lower down the mountain, off the Tuchila shelf, during the period 13-15 Nov. 1976. During the visit to Mlanje (Tuchila) 1-3 April 1977, the synlestid *Chlorolestes elegans* Pinhey was seen commonly at several streams on the shelf, close to the *O. phoenix* habitats. Individuals with banded and unbanded wings were captured and this appears to be the most northerly record for *C. elegans*, which is essentially a dragonfly of the Drakensberg Mts of the R.S.A. and mountains on the Zimbabwe-Mozambique border. No *O. phoenix* were seen during any of the other visits to Mlanje Mt. These observations, together with those of PINHEY (1971 & 1979, cf. above), suggest that the main flight period for this species on Mlanje is November and December.

Unsuccessful attempts have been made to locate further populations of *O. phoenix* on the nearest likely mountain in Malaŵi (Zomba) and the Nyika Plateau in northern Malaŵi. Zomba Mt. probably does not have *O. phoenix* because the area of suitable habitat is too small. The Nyika Plateau is a large area of derived grassland of about 2000 m altitude or higher, but no *O. phoenix* have been seen there in the expected flying period. It seems probable that *O. phoenix* is indeed restricted to Mlanje Mt. and that its status there is satisfactory only providing no major change in habitat occurs. The records indicate that *O. phoenix* is widespread in suitable localities on the mountain. At the present time there are no roads on to the plateau of Mlanje and the only industry is cedar timber (*Widdringtonia*) production. Nevertheless, there is a need to consider the species as potentially endangered as its distribution is so very restricted (within an area of about 20 km²), and no other suitable habitats seem to exist within several hundred kilometres.

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