

stigmatic fluid. The absence of carpellary (and staminal) appendages has no apparent effect on insect attraction, depth of the stigmatic pool, or the behaviour and deposition of pollen into the stigmatic pool. Whether the insect mortality rate from drowning is lower in *N. gigantea* due to lack of a circular palisade (i.e. a vertical, slippery wall formed by carpellary appendages and stamens around the stigmatic pool) as suggested by Schmucker, remains unknown.

#### ACKNOWLEDGEMENTS

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#### AN ACCOUNT OF *LIMNADIOPSIS BRUNNEUS* SPENCER AND HALL 1896 (CRUSTACEA: CONCHOSTRACA) IN WESTERN AUSTRALIA

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In January of this year, one of us (Schneider) was invited by Mitchell Plateau Bauxite Company, Perth to accompany a biological survey team to the Mitchell Plateau, Kimberley, Western Australia. The invitation permitted a rare opportunity to gain access into the remote Mitchell River region, an area known to support, during the wet season, the unique water lily, *Ondinea purpurea* den Hartog (Western Australian Museum, 1981). The systematic and pollination biology of the Nymphaeaceae has been of long standing interest to me (Schneider, 1979).

On the morning of January 18 after having been transported by helicopter to a steep, rugged, sandstone escarpment west of Mitchell Plateau (ca. lat. 14° 35'S, long. 125° 42'E), several shallow, temporary pools filled by the recent passage of tropical cyclone Bruno were observed. Examining each pool for aquatic macrophytes the presence of numerous clam shrimp (Crustacea: Conchostraca) were serendipitously noted. Several of the organisms were captured and preserved in F.A.A. On January 21 while observing populations of *O. purpurea* (lat. 14° 41' 40"S, long. 125° 40' 30"E), several additional temporary pools were encountered atop a long outcropping of sandstone. Many of the pools supported populations of Conchostraca and again several individuals were collected and preserved.



Upon my return to Texas the Conchostraca specimens were presented to a fellow colleague, Dr. Stanley L. Sissom, who has long been interested in the systematics and ecology of Conchostraca. The results of his preliminary observations follow.

The discovery and the opportunity to study 2 populations of *Limnadiopsis brunneus* Spencer and Hall 1896 is a singular, noteworthy event. Many specimens sent to me for species determination consist of only a few specimens and in this case we are indeed fortunate on having collected enough material from the Mitchell Plateau area to justify an expansion of the original description of this species previously known only from near Port Darwin, Northern Territory. The samples collected at lat. 14°41'40"S. and long. 125°40'30"E consisted of 28 males and 32 females. They were just reaching maturity and about 25% of the females were ovigerous showing eggs either in the ovary or they bore a clutch of 75-100 brownish yellow eggs on the flabella. It is interesting to note that the saw-tooth carapace design appears only on those females bearing eggs and it would appear that the saw-tooth dorsal hinge on the carapace is a result of providing additional space beneath the carapace for the clutch of eggs. Externally both males and those females not bearing eggs are so similar that one side of the carapace must be removed for sex determination. The average carapace size was 11.5 mm long, 7.1 mm high and 2.5 mm wide in the males and the females averaged 10.6 mm long, 7.1 mm high and 2.0 mm wide. In both sexes the carapace is dark brown with a lighter ventral edge. The average number of carapace lines was 18 in both sexes. These measurements are only slightly larger than those reported by Spencer and Hall (1896) from 4 dried specimens.

Approximately 15 km from the first sample a second sample was collected (lat. 14°35'S, long. 125°42'E) that consisted of 16 specimens all of which were in the latter pre-adult stages and too young to show the secondary sexual characteristics required to make an accurate determination of the species. However, past experience with immature specimens and these samples average morphology leave very little doubt that this sample consists of immature *Limnadiopsis brunneus*. Since there is a wide range of immaturity among these specimens we hope to gain important notes on the development of the pre-adult stages. A complete analysis of developmental stages will require laboratory culture not possible from preserved specimens. On the basis of these samples however it will be possible to complete the description of the species which will be the subject of a forthcoming study.

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#### FROM FIELD AND STUDY

**Barn Swallows at Carnarvon.** — On 10 February 1982 I watched a group of swallows hawking over the Gascoyne Research Station, some of which were puzzling. When the birds rested on a wire above me I was able to compare the



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