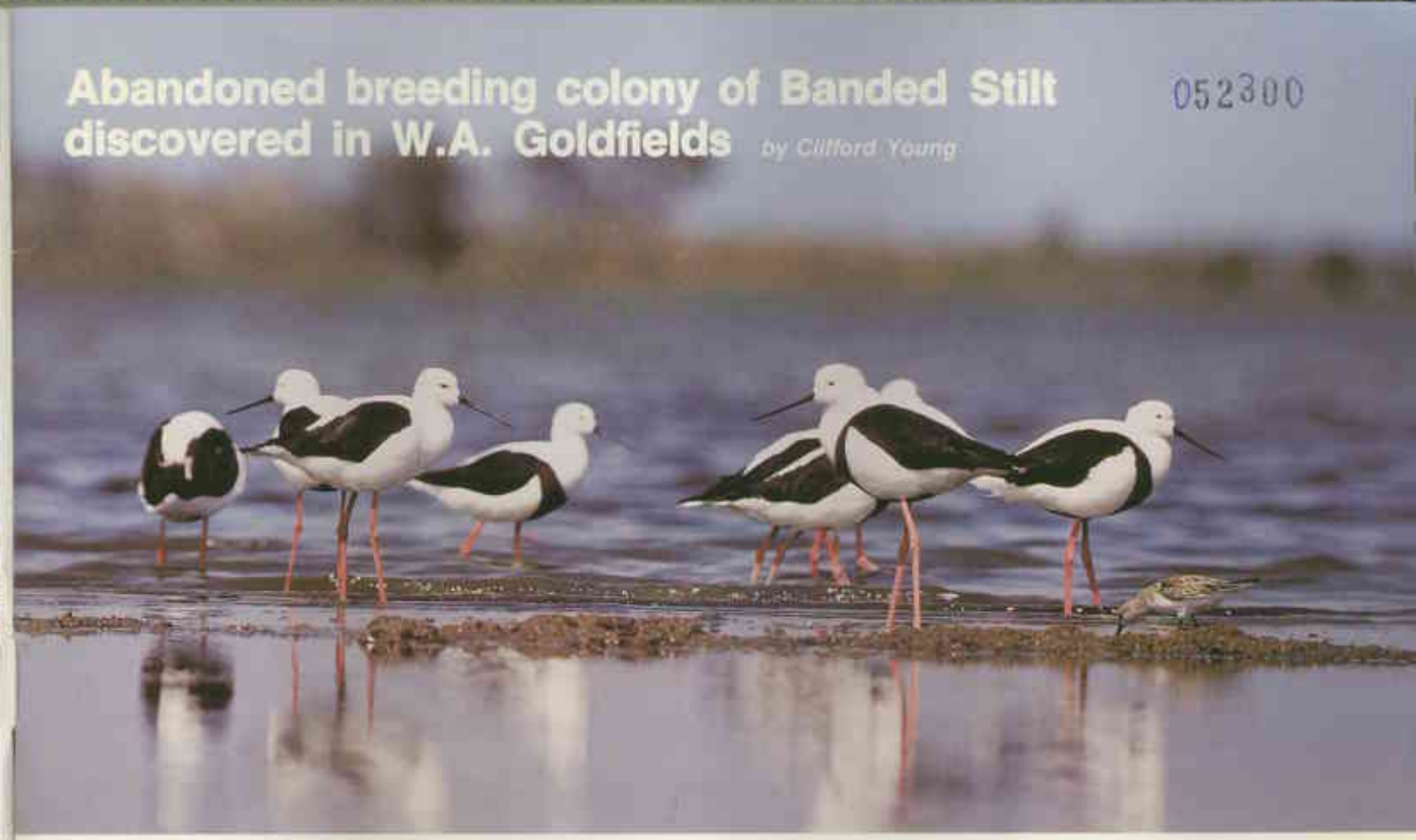
Abandoned breeding colony of Banded Stilt discovered in W.A. Goldfields

by Clifford Young



Although the Banded Stilt or Rottnest Snipe *(Cladorhynchus leucocephala)* **is a relatively common bird found on salt lakes and brackish estuaries throughout the southern portion of Australia, until August, 1930 the bird provided one of Australia's most intriguing ornithological mysteries. Where did it nest, and what were its eggs like?**

The Banded Stilt was first scientifically described in 1816 from a skin probably collected in southern Australia by the French expedition of *Le Geographe* and *Le Naturaliste* between 1800-1804. Then from about 1880 onwards the species became more and more often reported until the absence of nesting records for a species not found outside the Australian continent began to draw comment from many quarters. Except for false or mistaken claims of eggs found belonging to the bird which, in almost all instances turned out to belong to another species of stilt—the White-Headed Stilt, and an unsubstantiated report from Norseman in 1904 of black and white birds with black and white eggs nesting in large numbers, it was not until 1930 that the mystery was solved. In that year the birds were found nesting in large numbers at Lake Grace in Western Australia's eastern wheatbelt. By a remarkable coincidence, another nesting colony was located later the same year at Lake Callabonna in South Australia.

Since that time however, there has only been a handful of sightings of the bird nesting and ornithologists still have much to learn about its habits. It was therefore of great interest when Dr A. Burbidge and Mr P. J. Fuller from the Western Australian Wildlife Research Centre discovered a recently abandoned breeding colony of Banded Stilts at Lake Barlee while conducting a biological survey of the Eastern Goldfields in September last year.

The colony was the largest yet recorded, and was estimated to contain 179 000 nests and more than 255 000 addled eggs and dead chicks.

Mr Fuller, who visited the abandoned colony said "it appeared to have been abandoned at least 3-4 weeks before his visit". Many nest scrapes were empty but in some places up to 30-50 addled eggs were clumped against shrubs or in depressions, presumably having been blown there by the wind, and dead chicks, varying in age from newly hatched to half-grown, were scattered throughout the colony. The only sign of life was 12 three-quarter grown chicks which ran away across the now dry lake bed.

Dr Burbidge said the expedition found the colony after seeing flightless Banded Stilt chicks walking through the bush near Mt Elvire Station, about 5-10 kilometres from the shores of Lake Barlee. This led the men to search the shorelines of the Lake to the west, south-west and south-east of the Mt Elvire homestead. The middle arm of the lake, west of the homestead, contained extensive sheets of shallow salt water with depths within 300-400 metres of the shore not exceeding 10 cms. In an area 8 km south west of the homestead about 25 live half-grown chicks were seen together with about 100 flying birds and along the shore of the lake were more than 100 dead chicks varying in age from 1-2 days to full-grown. The eastern arm of the lake was also inspected but although this also contained extensive sheets of shallow water, no Banded Stilts were seen.

▲ The expedition found many clumps of eggs at the base of vegetation. They had been blown there by the wind. Photo by P. J. Fuller.

▼ Abandoned eggs were scattered over three small islands on Lake Barlee which can be seen almost dried up in the background. Photo by P. J. Fuller.

▼ Banded Stilt Photo—Copyright A. G. Wells

It was not until an aerial inspection of the lake was undertaken that the large nesting area on three islands in the central arm of the lake was found, and this observation was followed up by a ground inspection on 2 October.

The area of each island was calculated and the number of nests on each island was estimated by counting nests in ten plots, each of one square metre, selected by throwing an egg over the shoulder and using the point of impact as the centre point of the plot. The results showed the three islands held about 179 000 nests and about 255 000 addled eggs and dead chicks.

However, as the clutch size is usually three of four, 179 000 nests would have contained over 500 000 eggs. This suggests that about 250 000 young survived long enough to leave the island. Even considering that many of these chicks would have died before being able to fly, the colony's breeding success must have been significant.

The density of nests on the islands was extremely high, up to 18 nests per square metre being recorded. Nests at this density could not have all been occupied by incubating birds at the same time so it would appear that breeding may have been continuous at this site for some time.

Heavy rain fell in the Lake Barlee area in May and June, 1980, with follow-up rains in July and breeding probably started soon after the lake filled. The birds may then have continued breeding as long as the environmental conditions remained suitable. The abandonment of the colony was probably triggered by a fall in the level of the lake which would have disrupted their food supplies. The Banded Stilt feeds mainly on small crustacea such as the Brine Shrimp (*Artemia salina*) and the related *Parartemia*. Both these crustacea are found in water high in salt content and their eggs are capable of surviving long periods of drought. They develop rapidly after heavy rains fill the lakes where they are found and crowds their lifetime into the brief time available in the shallow short-lived pools.

Dr Burbidge and Mr Fuller suggested that the high density of nests at Lake Barlee could only be explained by the same birds laying more than one clutch, each in a new nest, or successive waves of birds laying within the one colony. Available data also suggest that the parents do not feed the young for long but leave them to fend for themselves. Such behaviour has high survival value in the environment in which the Banded Stilt breeds—a place where there is abundant food, but for a very short time. Rains heavy enough to fill the inland salt lakes of Western Australia only occur, on average, every 5 years or so, and under these circumstances the Banded Stilt has, Dr Burbidge believes, developed a reproductive strategy based on high fecundity and minimal care of the young. The large egg it lays and the large well developed young are adaptions to this strategy.

Brief Nesting History of The Banded Stilt in W.A.

Australia is the only continent which does not have flamingoes—that flamboyantly colourful wading bird. Interestingly enough, however, fossil flamingoes have been found in Central Australia but apparently these died out millions of years ago. Recent research by scientists in the U.S.A. has shown that the Australian Banded Stilt is the closest living relative of the flamingoes.

The Banded Stilt (*Cladorhynchus leucocephala*) is a striking black and white bird and is often found in its thousands feeding in shallow inland salt lakes. In contrast, the birds' nesting habits, type of eggs and young remained a well guarded secret until 1930 when a colony was found nesting at Lake Grace on the edge of Western Australia's eastern wheatbelt. However, in the light of that discovery and a subsequent accurate description of the bird's unusual egg—a large, lustreless egg varying in colour between deep fawn and pure-white with black or deep brown markings forming twisting and turning lines over the surface—it would appear the Banded Stilt had been observed nesting earlier but not recognised at the time: A West Australian ornithologist, Mr F. Lawson-Whitlock wrote—"In the year 1904 I was in the Norseman district. The winter was exceptionally wet and Lakes Dundas and Cowan presented vast sheets of water. I saw Banded Stilts on Lake Dundas...Later in the year I met a young fellow who had been prospecting farther north on Lake Cowan. He told me he had come across a large colony of long-legged, long-beaked, black and white birds nesting on a sandy beach. He described the eggs as white with black markings. I was greatly puzzled as I held the view that the Banded Stilt probably migrated to a distant country to breed and I dismissed the probability that these birds were of that species. In the light of recent discoveries I now think that this was a colony of these remarkable birds."

In addition to its unusual egg (which is unlike the egg of any other wader and, according to Dr D. L. Serventy and H. M. Whittell in "*Birds of Western Australia*" approaches the pattern of eggs of the oyster catchers or Crested Tern), the Banded Stilt's young, when first hatched, are covered with pure-white down—the only such instance in the order of wading birds.

In the same year that the birds were first "officially" discovered nesting at Lake Grace, there was an unconfirmed report of Banded Stilts nesting in the Menzies area, north of Kalgoorlie, by Mr T. Smith of Kalgoorlie. Mr Smith said there was a huge migration of young birds from a large lake in the Menzies area—"almost as soon as they were hatched they started to walk toward the coast. I doubt if any reached there. I would be quite safe in saying they must have died by the hundred-thousand, for a strip of country about 30 miles wide was literally white with the dead birds."

Since the report of the original discovery at Lake Grace, further evidence was gathered that the birds had also nested at the same time at Lake King, 80 kilometres to the east.

No further nesting was reported until 1945 when an attempt was made again at Lake Grace followed by another attempt in 1946—both failed due to flooding. In November, 1960, preparations for nesting were found at Wagga Wagga Lake in the Yalgoo District, but this also failed—this time due to the lake drying up. Adult birds with young were encountered along the Canning Stock Route in 1971 and it was presumed nesting had taken place that year at Lake Disappointment. In 1973 and again in 1975, nesting was observed at Lake Ballard, north-west of Menzies. Also in 1975, 50 000 nesting pairs were seen at Lake Marmion, 35 kilometres east of Menzies.