

HERPETOLOGY IN BOTSWANA

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This is another of a range of articles published in the BHS Bulletin on Herpetology in Commonwealth countries.

Formerly the British Protectorate of Bechuanaland with its capital outside the country (at Mafikeng in South Africa), Botswana (capital: Gaborone) became an independent member of the Commonwealth in 1966. It is bounded by South Africa to the east (the Limpopo river forms the boundary) and south, Zimbabwe to the north east and Namibia (South-west Africa) to the west, with the Caprivi Strip extending across the north to separate Botswana from Zambia. The renowned Okavango Swamp lies in the north-west corner of the country, and the south and west constitute the greater part of the Kalahari (now called Kgalagadi) Desert. To the naturalist's delight, over 10% of the country is set aside for National Parks and Game Reserves, and the Moremi/Chobe park complex in the north supports the largest remaining population of elephant in Africa.

HISTORICAL ASPECTS

One of the earliest studies on the herpetology of Botswana was made by Sir Andrew Smith. His 1934/1835 expedition covered the south-eastern Kalahari, where he collected a number of specimens. Dr E. Holub and Prof. L. Schultze also collected in the same area in the late 19th and early 20th centuries respectively (see Auerbach, 1985). In the 1920s and early thirties. J.H. Power collected extensively in southern Botswana, and published two significant papers dealing with the herpetology of the Lobatsi-Linokana area (now Lobatse-Dinokana). Between March and September 1930, the Vernay-Lang expedition from the Transvaal Museum collected in Botswana; the herpetologist of the expedition was the famous Dr. V.F.M. Fitzsimons, and his 1935 paper detailing the results is at present the most thorough work on Botswana's reptiles. Between January and March 1967, Dr. D.G. Broadley of the Natural History Museum of Zimbabwe (now in Bulawayo) made a herpetological collecting expedition to Botswana. The results of this expedition (Broadley 1967) provide an initial attempt at detailed assessment of the herpetofauna of Botswana. Since then, little work has been done on the herpetology of Botswana, save the regional account by Auerbach (1985) and some notes on Setswana names for reptiles (Auerbach 1986). The major reference works include Fitzsimons *Lizards of South Africa* (1943) and *Snakes of Southern Africa* (1962), the latter recently revised and updated by Broadley (1983). *The amphibia of Southern Africa* (Poynton 1964) remains the only standard reference work on the amphibia of the region.

RECENT RESEARCH

Blomberg (1976), Blomberg et al (1982), Graham (1976, 1977, 1979, 1980) and Graham et al (1976) have published on *Crocodylus niloticus* (Nile Crocodile) in the Okavango. This last work, along with that of Taylor (1973) was meant to justify commercialisation of the Okavango Crocodiles. An F.A.O. consultancy report by Medem (1981) explored similar possibilities. The Nile crocodile is currently the only well studied member of the Botswanan herpetofauna.

There are at present three active herpetologists outside the Department of Wildlife and National Parks; they are Ronald Auerbach, author of *The Reptiles of Gaborone* (1985), currently working on a guide to the reptiles and amphibians of Botswana, which should be available shortly, Stephen Spawls, author of *Sun, Sand and Snakes*, and Job de Graaf of the Lutheran World Federation, currently working on ecology of the herpetofaunal community on the savanna/Kalahari boundary. One of us (S.S.) keeps a small collection of lizards and harmless and rear-fanged snakes for educational purposes at Moeding College; the college also has a small

wet reference collection. The students are encouraged not to kill snakes, but to report them for collection. All specimens are routinely weighed, measured and may be photographed. The information will be used in a forthcoming paper on the structure of the local herpetological community. So far, 24 species of snakes have been recorded in the area, including the Black Mamba, Spitting and Egyptian Cobras, and a previously unrecognised species of stiletto snake, *Atractaspis duerdeni*, which is in the process of being re-elevated to full species level by Dr Broadley. A number of range extensions and new records for Botswana have been submitted to SSAR's (U.S.A.) *Herpetological Review*. All herpetologists working in Botswana will in the near future start to contribute specimens to a wet collection to be maintained by the Department of Wildlife and National Parks, under the auspices of one of us (M.P.S.)

HERPETOLOGY ON DISPLAY

There are at present no snake parks or zoos exhibiting reptiles in Botswana. The National Museum in Gaborone has a small display of live reptiles, including Nile Crocodiles, Marsh Terrapins *Pelomedusa subrufa* and Hinged Turtles (*Pelusios sinuata*), and has a fine display of actively breeding Leopard Tortoises (*Geochelone pardalis*). The Botswana Defence Force maintains a collection of dangerous snakes (including Mambas, Cobras and Puffadders) and Pythons. This collection is not open to the public (although the B.D.F. traditionally have a public snake display at the annual Gaborone International Fair) but has a unique purpose: the soldiers of the B.D.F. are probably the only soldiers in Africa who are taught how to identify, catch, prepare and cook snakes as part of their training. The B.D.F. have published a small booklet, *Snakes in the Botswana Defence Force*. There is also a commercial crocodile farm, at Maun, on the east side of the Okavango, which offers guided tours of the farm. They take eggs from the swamps and incubate, hatch and rear them at the farm.

PRESENT NEEDS

Much remains to be done on the lower vertebrates of Botswana. Virtually no work has been done on amphibians. The distribution of many species of reptile and amphibian within Botswana is almost unknown. This is cause for concern, since commercial utilisation of reptiles and amphibians requires sound knowledge of the status of the species. While our knowledge of the herpetofauna of Botswana remains as poor as is the case elsewhere (see Simbotwe 1986), then the zoogeographic picture of the southern African fauna will remain incomplete. Like elsewhere in Africa nowadays, there is a shortage of trained lower vertebrate zoologists in Botswana. We are trying to rectify this by starting a National Zoological Collection, to be maintained by the Department of Wildlife and National Parks and used partly for training purposes.

In the biotic divisions of southern Africa, Botswana is divided into three main regions; a subtropical moist zone in the north and a temperate western zone south of the Tropic of Capricorn. Between these zones lies a subtropical arid zone. These biotic divisions are of great zoogeographical interest. We would like to know how our amphibians and reptiles deal with aridity and changing thermal conditions in Botswana. We are naturally interested in the nature of the distribution of herpetological populations; if we knew the ranges of our reptiles and amphibians we could use the knowledge in national land use management plans. To achieve this objective, we will shortly be starting a countrywide herpetological survey programme. At present we are running a countrywide Crocodile survey. There is a bright future for herpetology in Botswana. The current commercialisation of Crocodiles in southern Africa is one of the best things that has ever happened to the region, invoking an interest in Crocodile biology and lower vertebrate zoology generally. The local biologists in various African member states of CITES (Convention on International Trade in Endangered Species) who have been assigned to work on Crocodiles will need to acquire some training in herpetology, and hence hopefully this generation of scientists will continue work with the African herpetofauna, and come to appreciate the role amphibians and reptiles play in the ecosystem. If these biologists could be stimulated by the International herpetological community into joining herpetological societies, this could change the current dismal situation concerning herpetological research in Africa and other less industrialised countries. We urge the international scientific community to aid us as we struggle to popularise herpetology in Botswana and southern Africa generally. We are in the process of building up our research library in Botswana and any donations of book or journals would be welcomed by the Department of Wildlife and National Parks.

We also welcome any visiting herpetologists, for we feel that such visits and the contacts made through them will go a long way towards cultivating an interest in herpetology among our local scientists. Suffice it to say that manpower training is an area that is lacking and of importance to us in Botswana. With your co-operation, we hope to be able to do a good job and put Botswana in it's rightful place in the world of science and herpetology in particular.

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- Ed. note: Dr. Simbotwe is a Zambian who has already contributed an earlier account of the development of herpetology in that country (BHS Bulletin no. 18: 9-11, December 1986) and who is presently working in Botswana. Stephen Spawls is British and is currently working in Botswana. He has published a book on snake collecting in Kenya and lectured to the BHS in February 1982 on a savannah snake population in northern Ghana. He has also worked and collected in Egypt.