revealed no statistically significant differences between those of male and female, male and unsexed, and female and unsexed except in the case of carapace length ($P < .05$). Cloudsley-Thompson (1970) found a very close relationship between log weight and carapace length of ten *sulcata* when measurements of adults of both sexes and young were plotted together.

In chelonian studies, carapace length is frequently used as the index of size. Considering six measurements made in this study, we obtained slightly stronger correlations when regressing the parameters to width of the third vertebral rather than to carapace length. It would be interesting to determine if such positive relationships exist in low-domed tortoises.

Grubb (1971) obtained high r values between various morphological measurements and carapace length of *Geochelone gigantea* on Aldabra, while Bourn and Coe (1978) also working with *gigantea* found high correlations between a number of parameters and the curved width of the third vertebral, and they concluded that the third vertebral is a useful and convenient index of size. Some of the data provided in Table 1 on *G. sulcata,* a mainland species, can be compared to the morphometrics of its island congener *G. gigantea* (see Tables and Figures in Bourn and Coe, 1978). In general, shell growth of *G. sulcata* is similar to that of *G. gigantea,* although some individuals of both sexes of the latter species grow to a larger size. According to Villiers (1958), *G. sulcata* is the largest African tortoise.

Cloacal temperatures of three medium-sized, unsexed individuals, one large female and one large male, all semiactive, were taken at 0830 on 12 September. The thermometer was inserted about 5 cm into the cloaca. The five tortoise temperatures averaged 29.5°C (S.D. ± 0.11, range 29–30°C). The sand temperature at 0.5 cm depth and the air temperature at tortoise height were 28.5°C and 26°C, respectively. Mackay (1964) found that the deep body temperature of a large, free-roaming *Geochelone elephantopus* in the Galápagos Islands ranged between about 28.5 and 32.5°C.

LITERATURE CITED

Bourn, D. and M. Coe. 1978. The size, structure and distribution of the giant tortoise population of Aldabra. Phil. Trans. Roy. Soc. Lond. B, 282:139–175.

Cloudsley-Thompson, J. L. 1970. On the biology of the desert tortoise *Testudo sulcata* in Sudan. J. Zool., London. 160:17–33.

Grubb, P. 1971. The growth, ecology and population structure of giant tortoises on Aldabra. Phil. Trans. Roy Soc. Lond. B, 260:327–372.

Mackay, R. S. 1964. Galápagos tortoise and marine iguana deep body temperatures measured by radio telemetry. Nature 204:355–358.

Sokal, R. R. and F. J. Rohlf. 1969. Biometry. W. H. Freeman, San Francisco, 776 pp.

Snedecor, G. W. and W. G. Cochran. 1967. Statistical methods; sixth edition. Iowa State U. Press, Ames, 593 pp.

Villiers, A. 1958. Tortues et crocodiles de l'Afrique Noire Francaise. Initiations Africaines No. 15, I.F.A.N. Dakar, 354 pp.

HAROLD F. HIRTH, Department of Biology, University of Utah, Salt Lake City, Utah, 84112 and EISA M. ABDEL LATIF, Department of Zoology, University of Khartoum, Khartoum, Sudan.

Accepted 7 July 1980

1981 JOURNAL OF HERPETOLOGY 15(1):120–121

Egg Cache of a Galapagos Gecko

Most published information on the six species of *Phyllodactylus* geckos found in the Galapagos Islands consists of taxonomic studies, including pertinent collection notes (Thornton 1971). As a result, the reproductive biology of these geckos is little known. This note describes observations on an egg deposition site of *P. galapagensis* at Bahia Cartago, Isla Isabela in January 1979. There I found gecko eggs deposited 1.5 m above the ground in a fork of a tree cactus (*Opuntia* sp. probably *echios*). These eggs were located on organic material in the fork under the skeletal remains of a decayed cactus pad. The clutch consisted of 13 unhatched eggs and 3 that had hatched successfully. Development in three eggs that I opened varied from a barely visible embryo to a nearly full term embryo. Differential development indicates that the gecko eggs were deposited in the egg cache over a period of time. The repeated use of the site and successful hatching of several of the eggs suggest that the cactus fork provided an effective incubation microhabitat.

Two observations are of interest, the multiple clutch and the arboreal site. The smaller species of *Phyllodactylus* geckos such as *galapagensis* have only one egg per clutch (J. W. Wright, pers. comm.). Thus the egg deposition site was either used by one female repeatedly or more likely was a communal site used by several females. Although unreported for *P. galapagensis,* communal egg deposition is known to occur in other geckos (Taylor 1963, Chou 1979), although neither the mechanism of site selection nor the function of communal sites has been studied. To date on the Galapagos, most *Phyllodactylus* eggs have been reported from the ground under stones and lava blocks, but some have been reported under bark, in old wood, in insect holes, and in a mangrove tree (Heller 1903, Van Denburg 1912). It is possible that the cactus represented one of the few suitable egg deposition sites available in this dry habitat (J. W. Wright, pers. comm.), and so its use was maximized. However there did not appear to be a shortage of potential ground sites. Perhaps the existance of an ideal microhabitat away from the usual haunts of predatory vertebrates and arthropods may also be a factor in the placement of this egg cache, although the occurrence of a shed snake skin .5 m above the cache indicates that the cactus was not predator free. Instances of arboreal nesting now reported for Galapagos geckos are all from Isla Isabela. Although this may very well be a result of a lack of published data, it does raise an intriguing possibility of inter-island variation in egg site selection. Certainly much remains to be learned about the *Phyllodactylus* geckos of the Galapagos.

This study was supported in part by a grant by the Frank M. Chapman Fund of the American Museum of Natural History and the Charles Darwin Research Station. I thank M. S. Kushlan, B. Gutierrez-Guerrero, and H. Hoeck for assistance in the field and especially J. W. Wright for advice on this note. This is a contribution from the Charles Darwin Research Station.

LITERATURE CITED

Chou, L. M. 1979. Eggs and incubation period of three Gekkonid lizards. Copeia 1979:551–554.

Heller, E. 1903. Papers from the Hopkins Stanford Galapagos expedition, 1898–1899. Proc. Wash. Acad. Sci. 5:39–98.

Taylor, E. H. 1963. The lizards of Thailand. Univ. Kansas Sci. Bull. 44:687–1077.

Thornton, I. 1971. Darwin's Islands. Natural History Press, New York. 322 pp.

Van Denburg, J. 1912. The geckos of the Galapagos Archipelago. Proc. Calif. Acad. Sci. Ser. 4, 1:405–430.

JAMES A. KUSHLAN, South Florida Research Center, U.S. National Park Service, P.O. Box 279, Homestead, Florida 33030, USA.

Accepted 7 Sept 1980

1981 JOURNAL OF HERPETOLOGY 15(1):121–122