

History. Boston, Christopher Publish. House), only states that copulation takes place in the water. On July 14th, 1962, I witnessed this in a pair of large alligators at the San Diego Zoo. Copulation of this pair was also observed on July 10th by Mr. Carl Pyle, the Senior Keeper of Reptiles. Exact measurements are unavailable, but the overall length of the male is estimated at ten feet; that of the female at eight feet, with slightly more than half of this comprising the snout-vent length.

The female approached the male, who was floating in deep water, circling him slowly and then swimming to the shallow end of the pool. The male followed the female and commenced to caress her head gently with his. For four minutes the male's caresses were long sweeps broadcast over the female's head, which progressed to two minutes of short, vigorous rubs concentrated on the posterior part of the female's skull.

The male and female then swam closely together to the deepest part of the pool, where they lay alongside each other, the male becoming increasingly affectionate and again nuzzling the posterior part of the female's head for an additional three minutes. The male then slowly mounted the female from the last two-thirds of the latter's body, by backing up slightly and going laterad. The female, who remained passive throughout, assisted by submerging her body. Slowly, the male depressed his tail until it was level with that of hers. Erecting and protruding his organ externally he brought it into contact with and entered the cloaca of the female. Coition lasted for fifteen minutes, after which the pair parted.

A MALE *COLEONYX VARIEGATUS VARIEGATUS* (BAIRD), WITH TWO PAIRS OF POSTANAL SPURS

By

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INTRODUCTION

The ground geckos of the genus *Coleonyx* inhabit North and Central America, ranging from the arid desert regions of the southwestern United States to the jungles of Panama. Male specimens possess a pair of externally projecting postanal bones, the spurs, which are situated laterally near the base of the tail. Their function has been shown by Greenberg (1943) to be to pull back the lower cloacal lip of the female prior to copulation. The broad internal base of the spur then exerts pressure on the hemipenis, which expands. Further data on the form of the spurs in *Coleonyx variegatus* is given by Smith (1933).

A colony of a dozen specimens was obtained for a behavioural study. They were collected in the Borego Desert, San Diego County, California. On examination one male was found to possess two pairs of postanal spurs. This male *C. v. variegatus* has been observed mating on several occasions. The abnormality does not interfere in mating as the second pair of spurs are functionless.

DESCRIPTION OF TYPICAL SPURS

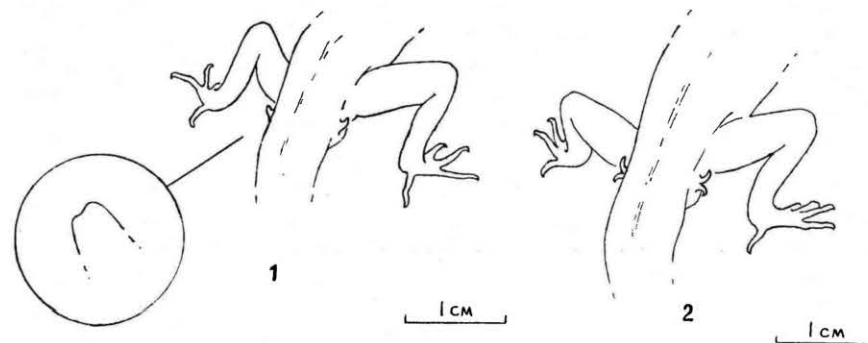
In adult males the spur development is fairly uniform. They are visible externally for slightly in excess of one mm. and point upwards and out-

wards. Broad at the base and for most of their length, the tip exhibits a more pointed appearance and the front portion of the spur protrudes further than the rear portion. A very slight depression or notch is sometimes present in the centre. The appearance of the spurs is illustrated in fig. 1.

DESCRIPTION OF DOUBLE SPURS

No record of similar development is known to the author. Smith (personal communication) has never observed this condition nor has he seen mention of it in the literature.

The spurs are present two or three mm. behind the hind limbs on the sides of the tail in the typical postanal position above the region of secondary sexual swelling. The first pair of spurs are abnormal. They are directed upwards and outwards but are more elongated, approaching two mm. in



Coleonyx variegatus. 1, Normal condition. 2, Specimen with double spurs.

total length. They are also slimmer than those of other male specimens examined and come to a definite, single point. The base of the second pair of spurs is directly behind the base of the first pair. They are much smaller (one mm.) and, like the first pair are curved. They point backwards. Their arrangement is shown in fig. 2.

ACKNOWLEDGMENTS

Mr. Robin Lawson kindly obtained the *Coleonyx* for me in California. I am indebted to Mr. James Wilson for drawing the figures from life—a difficult task due to the extremely small size of the spurs.

REFERENCES

- Greenberg, B. (1943). Social behaviour of the western banded gecko, *Coleonyx variegatus* Baird. *Physiol. Zool.*, **16**, 110.
Smith, H. M. (1933). On the relationships of the lizards *Coleonyx brevis* and *C. variegatus*. *Trans. Kans. Acad. Sci.*, **36**, 301.

FURTHER RECORDS OF LARGE LITTERS FOR COMMON LIZARD AND SLOW-WORM

By

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The following records of large litters for the Common Lizard (*Lacerta vivipara* Jacquin) and Slow-worm (*Anguis fragilis* L.) may be of interest.

The numbers of young exceed the range given by Smith (1954) for this country although they are less than the maxima found by Holder and Bellairs (1963) and the Slow-worm record by Johnson (1963).

A Common Lizard, taken July 11th, 1960, at Wicken Fen, Cambridge-shire, gave birth to eleven young the same day. Three were still in membranes and were removed when they showed no attempt to struggle free. Of these one died the same day. Three of the ten survivors were given to Mr. L. J. Wolff of Newton Park College, Bath, for teaching purposes. The remainder did not survive the summer in vivaria.

On August 29th of the same year a large Slow-worm was taken near Swanage, Dorset, which over the period September 12-17 gave birth to nineteen living young and one which failed to emerge from the membrane and was discovered dead. Total lengths of the nineteen young, measured alive by dividers, ranged from 80-90 mm. approximately. Weighed on an automatic analytical balance of 1 mgm. sensitivity, at the Furzebrook Research Station of the Nature Conservancy, live weights at birth ranged between 0.4 and 0.6 gm.; the average 0.49 gm. Some of this litter are preserved in the spirit collections at Liverpool City Museum.

REFERENCES

- Holder, L. A., and Bellairs, A. d'A., 1963. "Litter records for Common Lizard and Slow-worm." *Brit. J. Herpetology*. Vol. 3, No. 5, Dec. 1963, 133.
- Johnson, M., 1963. "Slow-worm Record." *Naturalist*. No. 884, Jan.-Mar., 1963, 133.
- Smith, M. *The British Amphibians and Reptiles*. Collins, London. 2nd Edition 1954, pp. 176, 197.

DELAYED HATCHING AND GROWTH OF COMMON LIZARD (*LACERTA VIVIPARA*)

By
H. ASHLEY BEST

A captive common lizard laid seven eggs on July 28th, 1963. These were placed in a glass jar and incubated at 75-80°F. One hatched after 24 hours; four others hatched after periods of up to seven days; the remaining two eggs failed to hatch. It is, of course, not unusual for young of the common lizard to be born still enclosed within their membranous eggs; M. Smith (*The British Amphibians and Reptiles*, Collins, 1954) states that they may not emerge for some days. A delay of seven days before hatching is perhaps unusual, however.

The baby lizards began to feed the day after hatching, taking black and green aphids and small spiders. At hatching they measured some 32-35 mm. with tail; one grew to about 45 mm. after 75 days. These figures are lower than those given by Smith for young of this species.

Limericks, Stonecourt Lane,
Pembury, Kent.

REVIEW

THE CONTINENTS WE LIVE ON Europe A Natural History, by
KAI CURRY-LINDAHL. Hamish Hamilton, London. 1964. 300 pp.
4½ gns.

A superbly illustrated Chanticleer Press edition dealing with Europe's varied scenery, fauna and flora, from the tundra of the far north to the sub-tropical lagoons of the Camargue in the south of France. The text is admirably informative and clear, and the herptiles get their due share of attention.

MEN AND SNAKES: by RAMONA and DESMOND MORRIS. Hutchinson,
London. 1965. 224 pp. 50s.

A fascinating and scholarly account of serpent lore with an excellent chapter on general biology. Highly recommended for both instruction and entertainment.

A. D'A. BELLAIRS.

ANNOUNCEMENTS

The American Society of Ichthyologists and Herpetologists invites attention to its CATALOGUE OF AMERICAN AMPHIBIANS AND REPTILES, a new kind of publication consisting of a series of extended taxonomic accounts each prepared by an expert on the taxon. Each is printed on a separate 8½ in. x 11 in. sheet punched for a standard binder and each contains a synonymy, definition of the taxon, descriptions, a list of illustrations, a statement regarding distribution and a map, a summary of the fossil record, the etymology of the names, a list of pertinent references, and other useful information. Several accounts are now available; others are being issued from time to time.

The cost of each sheet is 10c; the optional, imprinted post binder is \$5.00. Subscriptions in any amount for currently available and future accounts are invited, and prepayment of \$5.00 for accounts alone and \$10.00 for accounts plus the binder is suggested in order to avoid a billing charge. Postage and handling costs are prepaid on such orders, and subscribers automatically receive all accounts as soon as they are published. Make checks payable to *Amer. Soc. Ich. & Herp.* and address orders to *Catalogue Committee, 3913 Wexford Drive, Kensington, Maryland 20795*.

Lt.-Col. R. H. R. Taylor (The Studio, Belchamp St. Paul, Sudbury, Suffolk), would be grateful for further distribution records of the British amphibians and reptiles.

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