

Field Behaviour and Physiology of Amphibolurus ornatusS. Donald Bradshaw

From field studies it is known that the small dragon lizard Amphibolurus ornatus is completely restricted to large granite outcrops where it is confronted with two problems: intense heat and the absence of surface water during the summer months. This animal copes with these problems by a combination of behavioural avoidance of extreme conditions and appropriate physiological tolerances. The thermoregulation which it achieves by behavioural means prevents body temperature from exceeding 40°C., even though the temperature of the rock surfaces within its habitat may reach 75°C. Loss of water from the respiratory tract and the skin is slow and excretion is curtailed during summer, so the water obtained in a diet of insects is sufficient for maintenance of water balance between the widely spaced summer rains.

Aspects of Kidney Function in LizardsVaughan H. Shoemaker

Relatively few studies of the functional characteristics of the kidneys of lizards have been made, and virtually nothing is known of the effects of temperature on these organs. Accordingly, an investigation of how temperature influences the capacities of several species of lizards for eliminating experimentally applied water loads has been undertaken. In the lizards studied (Amphibolurus barbatus, Gymnodactylus milii and Tiliqua rugosa) the rate of excretion of a water load equivalent to 10% of body weight varies directly with temperature between 14°C and approximately 35°C. This appears largely due to the increasing rate of glomerular filtration which develops with increasing temperature. The ability of the animals to resorb sodium from the glomerular filtrate appears directly related to temperature between 14°C and some higher temperature which varies with the species. Beyond this higher temperature, an inverse relation develops. The effect of temperature on sodium resorption appears independent of that on filtration rate. The

significance of the former effect is that it indicates that conservation of sodium during elimination of water loads is temperature dependent.

DEPARTMENTAL VIEWS ON DIVING FOR CRAYFISH.

Last February, the Secretary of the Geraldton Professional Fishermen's Association (Mr. F.J. Hacket) forwarded to the Department a request that the Minister prohibit the taking of crayfish for commercial purposes by means of diving and extracting them by hand from their places of refuge. The Association thought, Mr. Hacket explained, that this method would lead to the depletion of the grounds by taking all the "pot-shy" crays. It also pointed out that there was an unduly high mortality rate of hand-caught crayfish in holding pots.

The Association's request has been very carefully considered for we appreciated that it represented the considered views of many experienced fishermen. It has been decided, however, not to prohibit this means of capture at the present time for the following reasons, most of which have been formed from observations by our own research staff while diving on the grounds -

1. At the start of the season many crays are not ready to "crawl" and are not taken by pots at that stage. Later on, though, when their shells harden, many do enter pots and so are lost to the fishery.
2. High mortality rates are not restricted to hand-caught fish. Instances of losses from pot-caught crays are known to have been as high as two bags a night. Crays which have just started to crawl are also in a very weak condition.
3. Although pots can be set by hand among large concentrations of fish and a higher catch-per-pot obtained, far fewer pots can be set by this method, which reduces the time/effort efficiency rating to a figure comparable with normal potting.
4. Crayfish frightened from their hiding places by divers are not necessarily lost to the fishery as they simply hide elsewhere on the grounds.

The Association has been assured that the Department will keep the matter under constant review and, if at any time in the future fresh evidence suggests that our decision was wrong, appropriate action will be taken.