The Taipan

By J. R. KINGHORN, C.M.Z.S.

THE daily press recently gave considerable publicity to Australia's largest venomous snake, the Taipan, following the death of a Sydney collector from its bite.

Much of the information was of a somewhat sensational nature and several statements to the effect that a Taipan was worth as much as £2,000 were greatly exaggerated, and may have resulted in a "taipan rush" by collectors seeking quick fortunes.

The Taipan is the largest venomous snake in Australia and is second in size only to the King Cobra of India. When fully adult it may attain a length of eleven feet. Originally found at Coen, Cake York, Queensland, by collector W. McLennan in June, 1922, two perfectly prepared skulls and a complete skin were sent to the Australian Museum where the snake was recognized as new to science. It was described as *Oxyuranus maclennani,* and given the vernacular name of the Giant Brown Snake. Further examination showed this snake to be identical with one described years earlier by a German herpetologist who called it *Pseudechis scutellatus,* but it was not a *Pseudechis,* which genus includes the common black snake, so this name was discarded and the snake is now known scientifically as *Oxyuranus scutellatus.* Some years ago, Dr. Donald Thomson, who was collecting throughout northern Australia, found that the natives knew this snake by the name Taipan, and regarded it as the most deadly known to them so Taipan has been adopted as the vernacular name, Giant Brown Snake being rather misleading.

The head of the Taipan is long and narrow and the eye, which is large, varies in colour from orange-yellow to orange-red.
After Thomson.

For many years it was thought that the Taipan was restricted in range to the Cape York area and westward to the eastern boundary of Arnhem Land, but during the war it was discovered in southern Papua. We now know that it may be met with between the Fly River and the Port Moresby district, several heads and a complete specimen having been received from that area.

Dr. Thomson, who knows more about the Taipan than does any other scientist, records that it is common along the shores of the Gulf of Carpentaria where there are colonies of rats upon which it feeds. It lives in holes in the ground, probably the deserted burrows of rats or other small mammals. The Taipan is mainly diurnal in habits, generally coming out in the morning and evening to avoid the extreme midday heat. One specimen was taken by Thomson as late as 7.30 p.m., after it had fatally bitten a dog.

From all accounts this giant venomous snake is extremely aggressive and continues to fight savagely after capture, often severely injuring itself in its attempt to bite its captor or to escape. Thomson collected six specimens but found them very difficult to keep in captivity. However, from these he was able to make extensive and valuable notes on its method of biting, and its venom yields. He noted also that the Taipan, when annoyed, did not flatten its neck in the manner of other snakes, but depressed the sides of its neck in such a manner as to cause the vertebral column to protrude conspicuously as a sharp keel. When about to attack it raises several coils of its body from the ground, and flattens its head so that the angles of the jaw are forced outwards. When it strikes it does so with unbelievable rapidity and bites several times in quick succession, then, taking a firm hold, it bites again several times so as to eject almost all its stored venom.

The aborigines know its lethal nature for they say that a bite from a large one, which would exceed five feet in length, would result in death. At least five white persons have been bitten and only one recovery has been reported, that of a man bitten at Mossman, Queensland, in 1939. However, there is no absolute certainty that the victim in this instance was bitten by a Taipan, even though a supposed duplicate sent in for identification proved to be a Taipan. Two fatal cases were reported by Dr. H. Flecker at Cairns in 1939, both victims dying within seven hours. This will give some idea of the rapidity of the action of the venom.

Small quantities of the venom of the Taipan have been critically examined and valuable experiments have been carried out, but the supply has been insufficient for the production of antivenine. The venom

The skull of the Taipan. The large fangs are three to four times greater than those of the Black or Tiger Snakes.
Photo.—G. C. Clutton.

contains a thrombase which has the effect of coagulating the blood with great rapidity if it is injected direct into the blood stream, but there also is a breaking down of the smaller cells. The most dangerous constituent is a neurotoxin that produces paralysis, death being due to respiratory paralysis within a comparatively few hours.

The action of the venom is similar to that of the tiger snake. The reason why the Taipan may be considered the most deadly snake in Australia is that the fangs are very long and the venom is injected deeply into the flesh of the victim. An interesting comparison of the average length of the fangs of our dangerous snakes may be cited as follows:—Brown Snake 2.8mm., Copperhead 3.3mm., Tiger Snake 3.5mm., Black Snake 4.0mm., Death Adder 6.2mm., Taipan 12.5mm.

The only bites for which a specific antivenine is available are those of the Tiger Snake but this antivenine may be used for bites from Death Adders and Taipans in greatly-increased quantities, though with no certainty of its efficacy. The preparation of antivenine is a long and tedious task involving carefully controlled experiments with smaller animals, such as rabbits, so as to arrive at an estimate of a certainly lethal dose per body weight of the victim. At least thirty Taipans would need to be available to ensure a plentiful and regular supply of venom before production of antivenine could be commenced. It would seem that, lacking an antivenine for the treatment of Taipan bites, the most effective method for a bite on a limb would be local venesection under the direction of a medical man. In effect, venesection involves the special ligating, the opening of a vein and the washing out of the poisoned blood, with the blood of the victim. This has been effectively carried out following bites from death adders, and there appears to be no reason why it should not be done for bites from the Taipan, or any other snake that produces a neurotoxic venom. It must be understood that in the case of a bite from a snake producing a powerfully neurotoxic venom, a ligature does little more than delay death. Complete details of experiments by Dr. C. H. Kellaway on venesection practised first on sheep and, later, methods recommended for the treatment of bites on the limbs of man have appeared in the *Medical Journal of Australia* prior to the year 1939.