NEW SPECIES OF TOXIC PLANTS FROM WESTERN AUSTRALIA

By C. A. GARDNER, State Herbarium, Perth.

This paper contains descriptions of plants toxic to stock which have remained undescribed until now, including a new variety of *Gastrolobium spinosum,* also toxic to sheep. *Gastrolobium propinquum* has for many years been mistaken for Champion Bay poison (*G. oxylobioides*), and *G. tomentosum,* a little-known species, has been confused with crinkle-leaved poison (*G. villosum*).

The two new species and the new variety have been figured in colour, and are to be included in the forthcoming book, *The Toxic Plants of Western Australia.*

Gastrolobium propinquum C. A. Gardn. sp. nov.

Frutex erectus, ramulis patentibus, subangularibus, sparse sericeo-puberulis; stipulis setaceis, erectis, petiolo brevissimo non excedentibus neque spinescentibus; foliis ternis, lanceolatis, spinoso-mucronatis, utrinque attenuatis, glabris, tenuiter reticulatis; racemis axillaribus terminalibusque, folia superantibus; calyce sparse sericeo, labio superiore obtuso bifido; ovario stipitato, villoso.

In distr. Irwin in lutosis glareosis subhumidis, fl. m. Septem. Gardner 12233 (Typus); prope White Peak in glareosis lapidosis, fl. m. Septem. Gardner 8558; Isseka leg. H. W. Jones.

Frutex facie fere G. oxylobioides, ramis rigidis, erectis, dense foliosis, ramulisque angulatis pube sparsis, appressem cinerea vel albida internodiis ca. 12 mm. longis vel brevioribus; stipulae setaceae, 2-3 mm. longae, erectae, nigrae. Folia ternatim verticillata, rigide coriacea, laete viridia vel glauca, cum petiolo (3 mm.) 2.5-3.8 cm. longa, subcomplicata, acuta vel mucronata, mucronulo pungenti, recto, 1-2 mm. longo, fusco, nervo medio crassiusculo, venis pinnatis, interstitiis reticulatione densa, juniorum pagina utrinque cano-pubescentia, demum glabra. Racemi circiter 5-7 cm. longi, remote triflori. Pedicelli in ternis orti, bractae lanceolatae. Calyx campanulatus pubi breviter adpressus albido-subsericeus, 3 mm. longus, semiquinquelido bilabiatus, lobis obtusis, labii superioris alte connati. Corolla calyci vix duplo longior, vexillo suborbiculare, aurantiaceo, carina obtusissima purpurea; ovarium longiuscule villosum. Legumen ignotum.

This shrub, which may be known in the vernacular as Hutt River poison, attains a height of two feet with whorled, erect or spreading branches and a dark-coloured bark; the branchlets are angled, the angles being formed by the continuance of the leaf-stalk along the branch below its insertion, thus continuing as ribs. The leaves are mostly in threes, usually one and half to two inches in length, narrowly lance-shaped and somewhat folded lengthwise. The leaves have slender stalks and taper somewhat abruptly at both ends, with a fine pungent point at the apex. The stipules are fine and black in colour, but break up as the leaf matures. In colour the leaves vary from an olivaceous green to a blue-green (glaucous) colour.

The flowers are in long slender racemes much exceeding the uppermost leaves, and are mostly at the ends of the branches, but are additionally found in the upper leaf axils, not crowded, and rather well spaced. The calyx is less than a quarter of an inch in length on a slender stalk, and very sparsely hairy with appressed

white hairs. The corolla is orange-yellow in colour and about as long again as the calyx.

Hutt River poison grows along the Hutt River in clay or silty-clay soil, but we have it also from White Peak and from Isseka. The White Peak form has bluish leaves while the form from the Hutt River has olivaceous green leaves.

The plant has been confused with Champion Bay poison which it closely resembles when not in flower, especially in its leaf arrangement, leaf-shape and colour, but it is a taller more branched shrub, and when in flower can easily be distinguished from Champion Bay poison by its much smaller flower, the calyx with a sparse clothing of hairs, the racemes with more numerous flowers and the larger acute, entire chestnut-brown bracts which are longer than the calyx.

Gastrolobium tomentosum C. A. Gardn. sp. nov.

Ramis tomentosis, stipulis angusto-lanceolatis, petiolo subaequantibus deciduis; foliis oppositis, orbicularibus, passim late-ovatis, utrinque obtusis vel subtruncatis, minute mucronatis, margine obsolete crenulatis undulatisque, supra reticulatis et virescentibus, glabris, subtus cum pedunculis calycibusque molliter tomentosis; racemis terminalibus, subsessilibus, foliis superantibus, dense multifloris, pedicellis calyce brevioribus; bracteis villosis, ovato-lanceolatis, acutis, concavis alyci brevioribus, caducis, ovario longiuscule stipitato, villoso.

In distr. Darling ad Dardadine prope Williams, in collibus glareosis, fl. m. Oct. M. W. H. Moore (Typus); prope Narrogin, M. Martin. Species distinctissima. Frutex decumbens, rami recti, onuste ramulosi. Stipulae tenerae, fuscentes. Folia rigide coriacea, 2-2.3 cm. longa et plerumque vix angustior. Racemi subsessiles, juniores foliis excedentibus, densiflori. Vexillum aurianticum, carina alaeque purpurae. Legumen ignotum.

This plant, which may be known as woolly poison, occurs in the Dardadine district about twelve miles southward from Williams, and in the Narrogin district. It has only recently been received as a reputed toxic plant, and has not been officially tested. It has probably previously been confused with crinkle-leaved poison, but may be distinguished from that poison by its stiff erect stems and branches, much smaller racemes, and leaves which are densely white felted on the lower surface, but dark green above. The stipules are much smaller, and the hairs of the inflorescence are densely silky and short — quite unlike the long spreading hairs of crinkle-leaved poison. It is also related to runner poison, but the latter can always be distinguished by its flat rather large but thin cottony stipules, its prostrate habit, and its quite flat leaves with a finely reticulated network of thick veins, the small spaces between which are like pits in the lower surface of the leaf.

Woolly poison grows to a height of 18 inches to two feet, the principal features which distinguish it are the rounded leaves which are undulate (not flat) dark green above, white-felted underneath, in opposite pairs, small stipules which fall away early, and short racemes of dark-coloured flowers invested with

fine silky hairs. The corolla is relatively small, only slightly exceeding the calyx-lobes. It grows on gravelly rises, flowering in mid-September.

Gastrolobium spinosum Benth. var. *grandiflorum* C. A. Gardn. var. nov.

Ramis glabris, glaucis; foliis orbiculari-reniformibus, spinoso-mucronatis, integerrimis, glaucis; racemis terminalibus, densifloris, calyces amplie glabriusculi, labio superiore lato et breviter bifido; ovario longe stipitato, dense villoso.

Frutex 30 cm. altus, ramis patentibus; stipulae setaceae subspinescentes, demum patentes. Folia circ. 1.5 cm. longa, 2 cm. lata. Racemi 1.5-2 cm. longi; bracteae lanceolatae acuminatae, 5 mm. longae. Calyx 1 cm. longus, laxus, late campanulatus, lobis inferioribus ovatis obtusis, labio superiore lato bifido.

Hab. in distr. Irwin interiore prope Latham, in arenosis apertis, fl. m. Oct. Gardner sine no. (1934).

This variety appears to be the most toxic of all the varieties of *G. spinosum*. It has accounted for heavy losses in stock, especially sheep, in the Latham and Dalwallinu districts. It grows on open sand plain country, and is a low shrub with widely spreading, almost horizontal branches and large orange-red blossoms. The leaf is almost kidney-shaped or broadly heart-shaped, and deeply indented at the base. Pale green in colour, it is not very thick, but is rigid and the apex is somewhat abruptly narrowed into a slender but rigid spine. The flowers are almost twice the size of those of the other forms and varieties of prickly poison. It has been received also from near Mingenew, and from between Mollerin and Beacon, as well as from Kalannie.

NESTING SEASONS OF WESTERN AUSTRALIAN BIRDS—A FURTHER CONTRIBUTION

By A. H. ROBINSON, Coolup.

In the previous issue of this journal (p. 149) I. C. Carnaby has analysed his records since 1926 of the nesting of Western Australian birds. I have maintained comparable records during the same periods and over similar areas. In view of the interest now being shown in the incidence of breeding seasons and the factors controlling them I feel it an opportune time to publish a series of my records showing how closely they conform to Carnaby's data.

In 1921 and 1922 my records for Claremont, near Perth (Lat. 32° S.) were made over an area bounded by Cottesloe, Claremont, Floreat Park, Herdsman's Lake, Scarborough and the ocean. For the most part this area was in its natural state. The present-day settlements of Graylands, Floreat Park and City Beach were unknown and Herdsman's Lake was in the process of being drained. There was only one house at Perry's Lakes (now portion of Floreat Park), a relic of the days when the lime kilns were