

ON THE

UNIV. OF
CALIFORNIA

NATURALISED WEEDS

AND

OTHER PLANTS

IN

SOUTH AUSTRALIA,

By RICHARD SCHOMBURGK, DR. PHIL., DIRECTOR,

KNIGHT OF THE IMPERIAL ORDER OF THE CROWN, THE ORDER OF MERIT OF PHILIP
THE MAGNANIMOUS, AND THE ORDER OF THE CROWN OF ITALY; MEMBER OF THE
IMPERIAL CAROL. LEOPOLD ACADEMY, HON. MEMBER AND MASTER OF THE F.D.H.,
FRANKFORT O/M., ETC., ETC.

ADELAIDE:

E. SPILLER, ACTING GOVERNMENT PRINTER, NORTH TERRACE.

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It is an historical fact that whenever man settles in a new country he not only carries the weeds that are most troublesome in cultivated ground along with him, but he also exercises a potent influence over the indigenous vegetation, especially when he engages in agricultural and pastoral pursuits. The plough, the axe, the flocks and herds, are enemies to the existing vegetation, and as cultivation advances each representant of the herbaceous flora, perennial and annual, succumbs to the foreign influence. But the plough, axe, and herds are not the sole destroyers of the native herbage, for with cultivation are introduced noxious weeds, and the new-comers, finding a suitable soil and climate, spread with alarming rapidity, and become possessors of the ground, ejecting the indigenous herbaceous plants, and taking their places.

From the past and present constant intercourse with Europe and other parts of the world, and the abundant importation of seeds into Australia for agricultural and horticultural purposes, it is no wonder that a very great number of the weeds most troublesome at home are now naturalised in South Australia.

Our temperate climate and soil suit their growth, and such atmospheric influences, as hot winds, unseasonable, &c., do not check their spread. Another cause of their extension is to be found in the extent of unoccupied ground, which is alone sufficient to account for the predominance and migration of so many of the worst European weeds. Some of these, viz.:—The Cockspur, *Centaurea melitensis*, Linn.; the Bathurst bur, *Xanthium spinosum*, Linn.; the Scotch thistle, *Onopordon Acanthium*, Linn.; the Variegated thistle, *Carduus Marianus*, Linn.; the Stinkaster, *Inula suaveolens*, Jacq.; the Sheep weed, *Lithospermum arvense*, Linn.; and the Cape dandelion, *Cryptostema calendulacea*, R. Br., already cover immense tracts of pasture land, and extend farther and farther to the destruction of the native herbage.

Notwithstanding that thousands of pounds have been expended legislation has not succeeded in extirpating the most troublesome of intruders, viz.,

the Scotch thistle and Bathurst bur, the burs of which are so dangerous to the sheep from their fastening themselves in the wool so firmly as to be removed only with difficulty.

It remains to be seen whether the altered circumstances of the acclimatised weeds, which seem to be so favorable to their growth, will prove permanent, or, by an over-stimulation, a change gradually effected in the constitution of the intruders, bringing about degeneracy and subsequent extinction. But such an influence is not yet observable, for they extend farther and farther, and grow just as luxuriantly in the districts whence they spread as far back as from eighteen to twenty-five years.

Grasses from other countries have also become domiciled in South Australia, which, no doubt, have materially improved the pasture near the coast.

But not only weeds and grasses, but also cultivated garden plants, perennial and annual, begin to spread and become acclimatised in pasture land.

It will not, therefore, be uninteresting to give a list of both weeds and other plants naturalised in South Australia, and, as far as possible, the dates and particular circumstances of their introduction, in order, as Sir J. Hooker remarks, to record their increase and migration, and to afford to succeeding observers the means of comparing their future with their present condition.

DICOTYLEDONS.

PAPAVERACEAE.

Common Fumitory.—*Fumaria officinalis*, Dec. A native of Europe, an early introduction: now a troublesome weed in gardens.

CRUCIFERAE.

Common Shepherds Burse.—*Capsella Bursa-Pastoris*, Moench and *Caps.*, *procumbens*, Fr., both well known European weeds. Have been in the colony for the last thirty years, and have spread with rapidity, especially in abandoned places and on roadsides.

Hedge Mustard.—*Sisymbrium officinale*, Scop. A native of Europe. Has found its way probably from Tasmania, and is now abundant on roadsides and in waste places.

Common and Narrow-leaved Pepperwort.—*Lepidium sativum*, Linn. and *Lep. ruderale*, Linn. Of European origin, an early introduction, spreading on roadsides and in abandoned places.

Watercress.—*Nasturtium officinale*, R. Br. A native of Europe, introduced about 1846, is now found in the streamlets near the coast.

Common Winter Cress.—*Barbarea vulgaris*, Linn. A well-known European plant, found near the coast, and considered by some to be an introduced plant, but also said to be evidently indigenous.

CARYOPHYLLEAE.

The weeds of this order, except the first, are not dangerous, as they are eaten by cattle and sheep, and are only troublesome in gardens.

French Catchfly.—*Silene gallica*, Linn. A native of South France. This troublesome weed found its way to South Australia about twenty-five years ago, and spread most rapidly, especially in poor, sandy, agricultural land and waste places. The cattle will only eat it when pressed by hunger.

Chickweed.—*Stellaria media*, Dec. Is a well-known native of Europe, and an early introduction. This troublesome weed is ubiquitous in gardens, and is also met with in the fields.

Thyme-leaved Sandwort.—*Arenaria serpillifolia*, Linn. A native of Europe and North America. Has been naturalised in South Australia for more than twenty years.

Common Mouse-ear Chickweed.—*Cerastium vulgatum*, Linn. From the south of Europe, and introduced in the early days of the colony.

Corn Spury.—*Spergula arvensis*, Linn. The well-known cornfield weed at home, which has made its appearance in South Australia within the last twelve years. *Spergula rubra*, Pers., is also spreading fast near the coast.

Gypsophylla tubulosa, Boiss. A native of the Mediterranean, which was introduced in the early days of the colony.

PORTULACEAE.

Oleraceous Purslane.—*Portulaca oleracea*, Linn. Known in the early days of the colony, and a very troublesome weed in gardens during the summer months. By some considered to be indigenous.

GERANIACEAE.

Hemlock-leaved Heron's Bill.—*Erodium cicutarium*, L'Her. A native of Europe, Africa, and Asia; was introduced early, and has widely spread in the colony, especially in pasture grounds. Cattle and sheep are fond of it.

Drooping Yellow Woodsorrel, called in the colony Sour-sop.—*Oxalis cernua*, Thunb. A native of the Cape of Good Hope, and introduced into the colony about 1840 as a garden plant. What the black oats are to the wheatfields, the *Oxalis cernua* is to the gardens. The effects of this scourge are strikingly apparent in every garden where it has been planted, and has notorious pre-eminence over all weeds introduced, since it is next to impossible to eradicate it when it has obtained a footing. The young bulbs penetrate every year deeper into the ground, often two feet, and so multiply that every young plant will produce next year from twenty to thirty bulbs, until the ground is matted over, and all other herbage choked.

Experiments were made by burying the plants from three to four feet deep, but the young bulbs came up the next year. It has found its way into the wheatfields, and spreads there most alarmingly

It is said that the first bulbs were sold in the colony at 2s. 6d. per bulb.

LEGUMINOSAE.

The following introduced fodder-plants have also spread over some of the pasture lands, improving them materially, viz. :—

White Clover.—*Trifolium repens*, Dec.

Golden-flowered Clover.—*Trifolium agrarium*, Dec.

Common Clover.—*Trifolium pratense*, Dec.

Small-flowered Melilot.—*Melilotus parviflorus*, Desf.

Lucerne.—*Medicago sativa*, Dec.

Toothed Medick.—*Medicago denticulata*, Willd.

Common Vetch.—*Vicia sativa*, Linn.; and *Vicia hirsuta*, Fisch. Natives of Europe and N. America.

UMBELLIFERÆ.

Common Fennel.—*Foeniculum vulgare*, Linn. A native of Europe. This useful medicinal plant was introduced at an early date, and has spread amazingly over the country, especially on the banks of creeks and water-courses, growing to an immense size, often four to six feet high, forming thickets and choking the herbaceous plants.

COMPOSITAE.

This order has supplied the most troublesome of the introduced weeds.

Scotch Thistle.—*Onopordon Acanthium*, Linn. A native of Europe. Made its appearance in the south, at Cape Jarvis, about 1845, and has since spread extensively over the country. It prefers a rich soil, and shows such a luxuriant growth that in some places it has formed impenetrable thickets,

throwing up flowerstalks of from four to six feet high, and destroying the native herbage entirely. Plants have been seen as far as two hundred miles north, for the winged seeds can be carried a great distance if they are taken up by the whirlwinds.

Cattle and sheep do not eat the plant, and its extension became so rapid and injurious to the pasture lands, that the Legislature, on October 21st, 1862, passed an Act for preventing the further spread of the Scotch thistle, including two other noxious foreign weeds equally dangerous to the herbage, viz., the variegated thistle, *Carduus Marianus*, Linn., and the Bathurst-bur, *Xanthium spinosum*, Linn.

According to the Act every owner or occupier of land upon which, or upon the adjacent half of any road, the above-mentioned thistles are growing, is obliged, in twenty-one days after notice, signed by any Chairman of a Road Board or District Council, has been served upon such owner, to destroy the thistles on his land, otherwise he is liable to a penalty not exceeding ten pounds. The Government must, on all unoccupied Crown lands, employ the necessary labor to eradicate the thistles. This stringent measure, it is true, has decimated the plants, but without effecting the object desired. Although thousands of pounds have been spent for the purpose, the destruction of thistles is generally commenced too late to prevent the dispersion of the developed seed.

Variegated Thistle.—*Carduus Marianus*, Linn. A native of South Europe, also wrongly styled Scotch Thistle, is said to have been introduced as a garden plant in 1846, and has spread to the same extent as the foregoing. In good soil it will grow from four feet to seven feet high. The only advantage it has, is that it is eaten by the cattle when young.

Bathurst Bur.—*Xanthium spinosum*, Linn. A native of South and West Europe, is as dangerous a weed as the sheepfarmers have to contend with. It was first observed in the colony about 1850, and for the first few years it was confined to the roadsides and the reserves used for travelling stock, but it spread from thence with alarming rapidity into the interior, assisted by the sheep and horses, in whose wool, and manes and tails, the bur is carried about and spread in all directions. It is said that as many as a hundred burs have been taken off the head of a sheep. The bur adheres so tenaciously to the wool until it is shorn, that it is difficult to pull it off without pulling the wool with it, and so it depreciates the value of the fleece 2d. to 3d. per pound.

Artichoke.—*Cynara Scolymus*, Linn. A native of South Europe, has been introduced about twenty-five years. It has found the South Australian climate so genial that it begins to spread throughout the colony. It is found

especially on the banks of rivers and creeks. It grows in good soil to an enormous size, choking, like the variegated thistle, the surrounding herbage.

Cockspur.—*Centaurea melitensis*. Linn. A native of the Mediterranean region, was introduced as far back as 1844, and has spread with rapidity, over cultivated as well as waste ground and pasture land, and appears abundant in various parts of the colony. Like the Bathurst bur, it was first observed on the roadsides, and the wind, as is the case with most of the compositæ, carries the winged light seed to a great distance. Stock will eat the plants when young, but will not touch it after the appearance of the flower stalks. On fallow and pasture land it forms thick swaths, and chokes the more tender indigenous herbs.

The following three species of Horse Thistle, viz., *Cirsium lanceolatum*, Scop., *C. palustre*, Scop., and *C. arvense*, Scop., natives of Europe, also become troublesome to the agriculturists. It is said that they have been introduced from Victoria and Tasmania.

Stinkaster.—*Inula suaveolens*, Jacq. A native of South Europe, is the most noxious and dangerous plant ever introduced. Neither cattle nor sheep will touch it, and it increases with most alarming rapidity. This plague was first noticed in the Onkaparinga district as far back as 1863, and, it is said, was introduced with seed wheat from home. Not knowing its dangerous character, no notice was taken of the plant until its fast spreading became apparent, and that no cattle would touch it, probably not liking the disagreeable odour the plant emits.

Its winged light seed flies with the prevailing winds to a great distance. It forms a thick swath, and smothers the indigenous herbage. The pasture land taken possession of by it becomes valueless, as the weed cannot be extirpated without heavy cost. Although only an annual, this useless plant is a prolific seed-bearer, and keeps its vitality for years. Thousands of acres of pasture land towards north and south, extending sixty to eighty miles from its starting point, has been taken possession of by this pest, and such lands as are covered with this weed have a most desolate appearance.

In cultivated land it is not so dangerous; the seed begins first to germinate in September and October, and the young plants are choked by the growing crops; but the haylands suffer, because the young plants spring up after the hay has been mown.

Cape Dandelion.—*Cryptostemma calendulacea*, R. Br. A native of the Cape. It was in the year 1850 that I first noticed a few isolated plants on the side of the road leading through the Gawler Plains. The following year a few made their appearance on the banks of the Gawler River.

From year to year it is rapidly taking possession of the pasture as well as cultivated land, and is now found quite two hundred miles towards the north from its starting point, covering even the untimbered mountain ranges to their summits. When in bloom the country presents a peculiar appearance, and as far as the eyes reach a yellow carpet only is seen. It is an annual, and although doing much harm to the more tender indigenous herbage, it is much liked by cattle and sheep, which eat it eagerly, preferring it even in a dry state to wheaten hay, and licking the large and very abundant seed from the ground. When in bloom many people consider it injurious to the lungs, from the inhalation of the pollen by which the air is impregnated. This circumstance may also be attributed to the moist atmosphere prevailing when the dandelion is in flower. Though the plant has taken possession of the land for the last twenty-five years, it grows as vigorously as ever, and it seems that over stimulation fails to bring about degeneracy and subsequent extinction. It is said that the plant was introduced from Tasmania.

Goat's Beard.—*Tragopogon porifolius*, Linn. A native of Britain. Within the last few years this weed, introduced from England, seems to have found a genial climate in South Australia, as it spreads everywhere, the profusely winged seeds being each carried about by the wind. Its large taproot, which proves to be an edible vegetable, takes hold in any soil. The plants are eaten by cattle when young.

Chicory.—*Cichorium Intybus*, Linn. A native of Europe, and introduced into South Australia about sixteen years ago, and is now abundantly found growing on the roadsides, especially on the Brighton Road, and along the railway to Glenelg. Although spreading fast in these places it will not become dangerous to our pasture lands, being a plant eaten eagerly by stock. As the plant has taken so well to our climate the culture of the chicory for manufacture would, no doubt, be a profitable undertaking.

Common Groundsel.—*Senecio vulgaris*, Linn. Known here for the last sixteen years. Becomes rather a nuisance in gardens, but improves pasture, as the cattle relish it much.

Golden Cornflower.—*Chrysanthemum segetum*, Linn. A native of Britain—probably introduced from Tasmania—also begins to spread much.

Common Stinking Maruta.—*Maruta Cotula*, Dec., (*Anthemis Cotula*, Linn.) A native of Europe. From its unpleasant odour is not at all an agreeable addition to our flora. It increases rapidly, as stock do not eat it.

Sow-thistle.—*Sonchus oleraceus*, Linn., was introduced in the early days of the colony, and has become a very troublesome weed in cultivated

ground, just as ubiquitous as we see it in the old country, and this is also the case with the two following species, viz. :

Rough-leaved Sow-thistle.—*Sonchus oleraceus*, Linn., var. *asper*. A native of Europe ; and the

Cornfield Sow-thistle.—*Sonchus arvensis*, Linn. A well-known European weed.

PRIMULACEAE.

Red-flowered Pimpernel.—*Anagallis arvensis*, Linn. A native of Europe, Asia, and N. America ; has become settled as an introduced plant in waste and cultivated ground.

BORAGINEAE.

Corn Cormwell, known in the colony under the name of Sheepweed.—*Lithospermum arvense*, Linn. A native of Europe, and established in the colony for about fifteen years; and in some districts spreading most alarmingly in the wheatfields, injuring the young wheat plants, by choking them entirely.

SOLANEAE.

Blackberried Nightshade.—*Solanum nigrum*, Linn. This well-known European noxious weed, was introduced in the early days of the colony—probably from Tasmania—and has spread with amazing rapidity in all directions far into the interior. Stock will not eat it.

Blackspined Nightshade.—*Solanum sodomium*, Linn. A native of the Mediterranean. Has for the last two years been found growing in waste places and on rubbish heaps.

Light Blue Tornapple.—*Datura Tutula*, Linn. From the South of Europe. This noxious weed has during the last twenty years appeared in South Australia in waste places, but especially on the banks of creeks and watercourses. A good many horses have already been poisoned by it, the plants having been mixed with the hay, and the seeds, the most dangerous part, having fallen into the manger.

Common Henbane.—*Hyoscyamus niger*, Linn. This well-known noxious European plant has appeared since the last few years on rubbish heaps and abandoned places, as at home.

PLANTAGINEAE.

Ribgrass.—*Plantago lanceolata*, Linn., *Pl. major*, Linn., and *Pl. coronopus*, Linn., all natives of Europe, were introduced early, and have

spread over the pasture grounds, and have much improved the pasturage, as the cattle and sheep eat it greedily.

POLYGONACEAE.

Knotgrass, and bears the colonial name hogweed.—*Polygonum aviculare*, Linn. A native of Europe, is one of the first of the troublesome introductions, and is now spread over a large part of South Australia, and especially in cultivated land and gardens. It forms a thick matting, and chokes the surrounding herbage. Cattle and sheep relish it.

Sheep's Sorrel.—*Rumex Acetosalla*, Linn., and the Curled Dock, *Rumex crispus*, Linn. Both dangerous European introductions, which monopolise cultivated land and gardens, to the entire exclusion of other herbs. They are not easily eradicated in consequence of their long roots penetrating deep in the ground, and if a small piece of one of these remains it will grow again.

EUPHORBIACEAE.

Warbwort Spurge.—*Euphorbia aviculare*, Linn. A native of Europe, has also found its way from Tasmania into South Australia, and is found growing on rubbish heaps and in abandoned places.

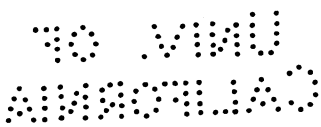
URTICAEAE.

Common and Small Nettle.—*Urtica urens*, Linn., and *Urtica dioica*, Linn., are said to have been brought over from Tasmania in the hay imported from there nearly forty years ago. They are mostly found growing on rubbish heaps and in abandoned places, and become troublesome in gardens.

MONOCOTYLEDONS.

GRAMINEAE.

Black Oat.—*Avena sativa*, Linn., var. *melanosperma* was undoubtedly either introduced with the original seed wheat from England, or from Tasmania, which latter we have to thank for the introduction of a number of noxious weeds, as in the early days of the colony a great deal of hay was shipped from thence to South Australia. The black oat has the most notorious pre-eminence of all the introduced weeds, and the effects of this intruder are most ruinous to the farming community, as it finds its way into all the cultivated land, and having once got a footing is the most troublesome



weed to eradicate, its seed ripening and being shed some time before the wheat ripens. It is a fact that the seed lies six or eight years in the ground, if covered one foot with soil, but by next year's ploughing if the seed comes near the surface it will spring up so abundantly before the sown wheat does as to choke the young wheat plants. It is almost impossible to cleanse the land thoroughly foul with black oats in less than several years, even by repeated ploughings. The rapid increase of this injurious plant is an object of serious concern to the farming community. Thousands of acres of arable land, especially such as have been in cultivation for some years, are totally ruined by the black oats for the purpose of wheat growing. At the present time the yield of wheat of many of the farms is diminished quite by two-thirds, or one, in consequence of the black oats, and often the crops can only be used for hay.

Darnel Grass, or Drake.—*Lolium temulentum*, Linn., probably an introduction from Britain. In the cereal fields, also, this spreads with alarming rapidity, as the seeds mostly ripen and drop before the wheat harvest.

The following European grasses have also found their way to Australia, but are less dangerous to cultivation—in fact, they have improved the native pasture near the coast materially, viz. :—

Wild Oatgrass.—*Avena fatua*, Linn. A native of Europe.

Early Flowering Hairgrass.—*Aira præcox*, Linn. A native of Britain.

Sweetscented Springgrass.—*Anthoxanthum oderatum*, Linn. A native of Europe.

Cocksfoot Panic.—*Panicum Crus-galli*, Linn. A native of Europe.

Glaucous Setaria.—*Setaria glauca*, Beauv. A native of South Europe.

Creeping Dogstooth Grass, or Couch Grass.—*Cynodon Dactylon*, Pers. A native of Europe and other parts of the world.

Annual Meadowgrass.—*Poa annua*, Linn. A native of Britain.

Ryegrass.—*Lolium perenne*, Linn. A native of Europe.

Rough Cocksfoot.—*Dactylis glomeratus*, Linn. A native of Europe.

Floating Foxtail-grass.—*Alopecurus geniculatus*, Linn. A native of Britain.

Wall Barley.—*Hordeum Murianum*, Linn. A native of Europe.

Small and Greatspiked Quaking-grass.—*Briza minor*, Linn.; and *Briza maxima*, Linn. European species.

Barren Broom-grass.—*Bromus sterilis*, Linn. A native of Europe.

Downy Rye.—*Bromus commutatus*, R. & P. A native of Europe.

Soft Broom-grass.—*Bromus mollis*, Linn. A native of Britain.

Hard Fescue-grass.—*Festuca duriuscula*, Linn. *Festuca bromoides*, Linn. Both European grasses.

Small Canary-grass.—*Phalaris minor*, Retz. *Phalaris canariensis*, Linn. Natives of South Europe.

Catstail Koeleria.—*Koeleria phleoides*, Pers. A native of South Europe.

GARDEN PLANTS.

The following plants cultivated in the gardens have found their way to the pasture lands surrounding towns and villages, and have become acclimated, viz.:—

Oenothera suaveolens, Desb.

Delphinium Consolida, Linn.

Linaria bipartita, Willd.

Eschscholtzia californica, Cham.

Scabiosa atropurpurea, Linn.

Bellis perennis, Linn.

Anchusa officinalis, Linn.

Malva rotundifolia, Linn.

Malva parviflora, Linn.

Malva crispa, Linn.

Verbascum Thapsis. Linn.

Verbascum Blattaria.

Sparaxis tricolor, Kerr.

Iris— in fact most of the bulbs introduced from the Cape of Good Hope begin to spread in pasture lands near gardens.