Department of Primary Industries and Regional Development
GOVERNMENT OF WESTERN AUSTRALIA

Journal of the Department of Agriculture, Western Australia, Series 3

Volume 5
Number 2 *March- April,1956*

Article 8

3-1956

Weeds of Western Australia - Bathurst Burr (Xanthium spinosum L.)

G. R. W. Meadly

BATHURST BURR

(Xanthium spinosum L.*)*

Bathurst burr presents a major weed problem in Europe, Asia, America and Australia. It was first introduced to Australia in the tails of horses brought to New South Wales from South America in the forties of last century. Besides having the usual disadvantages of weeds, the burrs cause an appreciable reduction in the value of wool.

WEEDS of Western Australia

By **G.R.W. MEADLY** M.Sc.
Officer in Charge, Weeds and Seeds Branch

BATHURST BURR

(Xanthium spinosum L.)

BATHURST burr now occurs in most countries, particularly where summer rains are experienced and its original habitat is somewhat obscure although usually regarded as being South America. It presents a major weed problem in Europe, Asia, Africa, America and Australia.

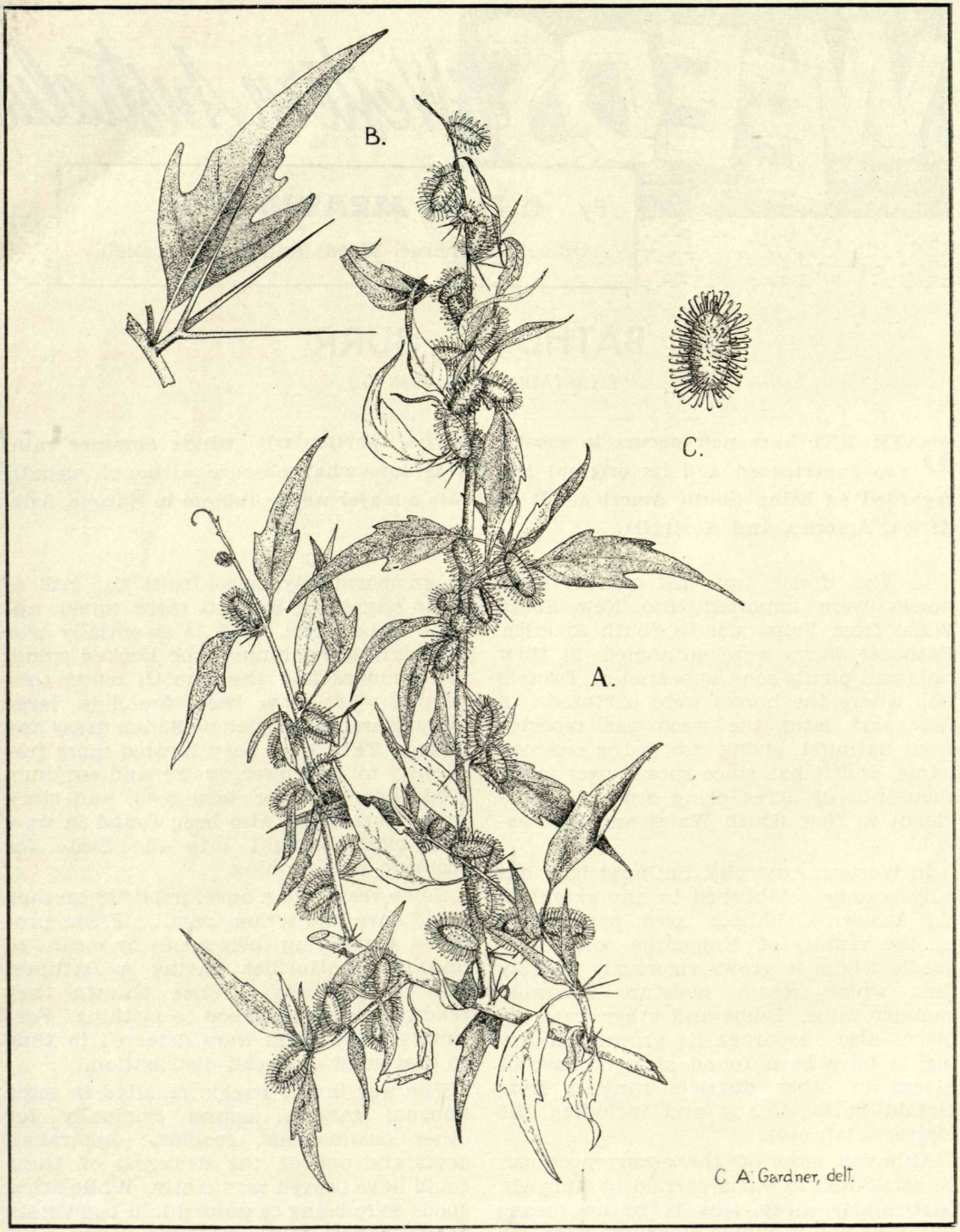
In the "forties" of last century some horses were imported into New South Wales from Valparaiso in South America. Bathurst burrs were entangled in their tails and plants soon appeared at Twofold Bay where the horses were pastured. A few years later the weed was reported from Bathurst, giving rise to the common name, and it has since spread over many thousands of acres being especially prevalent in New South Wales and Queensland.

In Western Australia, Bathurst burr has only become established to any extent in the Eastern Goldfields area, particularly in the vicinity of Kalgoorlie and Coolgardie where it grows vigorously on clay flats which retain moisture following summer rains. Dams and other watering places also encourage its growth. A few plants have been found at a number of places in other districts ranging from Geraldton to Albany and including the Metropolitan area.

Although most of the occurrences can be attributed to burrs carried by animals, particularly sheep, this is by no means the only way in which Bathurst burr has been introduced. Agricultural seeds have always presented a ready medium for the dissemination of weed seeds but as the seeds of Bathurst burr remain enclosed in comparatively large fruits the risk of their remaining in crop seeds would appear to be small. This is essentially true but, during machining, the hooked spines are removed and the smooth fruits containing seeds have been found in large agricultural seeds such as Sudan grass and maize. They have been located more frequently in sunflower, maize and sorghum seeds imported for bird seed and stock food. Burrs have also been found in wool and hides brought into the State for scouring and tanning.

Some years ago a novel publicity method could have had serious results. Firms proposed advertising their goods by means of imitation butterflies having a Bathurst burr as the body. When thrown they readily became attached to clothing. Fortunately the burrs were detected in time to prevent widespread distribution.

The war in the Pacific resulted in some unusual cargoes, bound originally for other destinations, reaching Australian ports and one of the strangest of these could have proved very costly. While other goods were being examined in a bond store at Fremantle some Bathurst burrs were noticed on the floor. A closer examination revealed that they had been spilt from a hole made by rats in a large pack the size of a wool bale. As the Orientals attribute



BATHURST BURR (*Xanthium spinosum* L.)

A—General appearance of plant; B—leaf and three-pronged spine; C—burr, showing hooked bristles.

(From a pen-drawing by C. A. Gardner, Government Botanist.)

some medicinal properties to the burrs, we can only assume that they had been consigned for that purpose. Hundreds of thousands of burrs were promptly incinerated.

Flood waters have proved an important distributing agent, particularly in the case of intermittent waterways. Plants become established in moist depressions and then, following rains, the burrs are swept along the courses of temporary rivers. This sequence of events is demonstrated on a large scale in New South Wales and is also quite apparent on the flats and along the gullies in the vicinity of Kalgoorlie and Coolgardie.

DESCRIPTION

The genus *Xanthium* contains several pest species including Noogoora burr (*X. pungens*) Californian burr (*X. californicum*) and Bathurst burr (*X. spinosum*). Bathurst in New South Wales, one of the first places from which the plant was recorded in Australia, has given its name to Bathurst burr.

It is a rigid, much branched annual of up to 3ft. in height, with greenish-yellow stems and leaves that are dark green above but pale underneath. The leaves are usually three-lobed with the central lobe longer than the other two and bear at their bases rigid three-pronged spines. The flowers are inconspicuous and are succeeded by brown, egg-shaped burrs of about one half-inch in length. These are covered with fine, hooked bristles and each contains two flattened seeds at least one of which may remain dormant for several years. The plant is essentially a summer-growing annual but seeds germinate and plants mature out of season, thus adding to the difficulties of control.

Bathurst burr has been declared a primary noxious weed for the State.

SIGNIFICANCE

There is some evidence that Bathurst burr can prove harmful to stock but, due to its spiny nature, it is seldom eaten and is not usually regarded as being poisonous. On the other hand the related Noogoora burr is known to be toxic, particularly at the young growth stages.

A Bathurst burr plant found growing near a metropolitan wool scouring works

Bathurst burr can interfere with summer crops and pastures but the characteristic that has made it such an undesirable weed is the tenacious nature of the burrs. The hooked spines readily become attached to clothing, bags and animals, especially sheep, and when entangled, their removal is not a simple matter. Sheep present the greatest problem as their fleeces make a very receptive surface for the burrs which depreciate the value of the wool. Bathurst burrs not removed during scouring can usually be crushed and the particles eliminated by special equipment. Although the more costly carbonising treatment necessary for Noogoora burr may be avoided additional work and expense are involved.

CONTROL

Preventing the introduction of weed seeds is always important but particularly when the weed concerned, such as Bathurst burr, has a restricted distribution. All imported commodities likely to contain burrs or have them attached are inspected. Sheep must conform to certain shearing requirements and be accompanied by a certificate of freedom from noxious burrs issued by the Department of Agriculture in the exporting state. They are then carefully examined on arrival at Kalgoorlie or Fremantle. Imported wool and hides are also inspected along with agricultural and bird seeds. Particular attention is given when they are known to be the produce of burr-infested areas.

Plants of Bathurst burr can be destroyed by cultivation and it is a greater problem on pastoral than on arable land. Good results have been obtained in the Eastern Goldfields district by spraying with 2,4-D

ester at the rate of one pound of acid equivalent per acre. The plants are most susceptible when small and, in order to be effective, spraying must be undertaken before burrs have formed.

Odd plants bearing burrs should be removed carefully in order not to scatter them, and the ground examined for any that may have fallen. Building a fire over the plants is often the most satisfactory way when only a few mature bushes are concerned. Even when all plants have been destroyed the site should be kept under observation for several years to cope with the longevity of the seeds. Seedlings are most likely to appear after late spring and summer rains. Under favourable conditions they grow rapidly and mature in a relatively short period.