Weeds of Western Australia—noogoor a burr

G R. W Meadly
Department of Agriculture

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Noogoora burr was first recorded in Western Australia in 1949 following upon the discovery of a number of the burrs in a used cornsack at Northam. The resulting publicity led to the discovery of plants in several localities where burrs had been introduced in parrot foods and in packing materials. In Queensland, this weed is responsible for heavy losses to the wool industry.
It is generally accepted that Noogoora burr was first introduced to Australia at Noogoora Station in Queensland in the early sixties of last century, presumably as an impurity in imported cotton seed. Southern Europe and Central Asia are regarded as being the natural habitat of this plant, but it now occurs in many other widely-separated countries. In North America and South Africa, members of the genus Xanthium are referred to as cockle-burr or clot-burr.

Noogoora burr has replaced prickly pear as the most serious weed problem in Queensland, infesting as it does enormous tracts of sheep country in that State and menacing the remainder. The magnitude of the problem can scarcely be appreciated without seeing the dense growth on what was previously rich grazing land. Every main watershed in Western Queensland is affected and the area is reported to be increasing each year.

Noogoora burr is also a major pest in northern New South Wales but is more restricted in Victoria and has been recorded from only a few localities in South Australia and Tasmania. Although favoured by summer rains, the few occurrences indicate that it could assume pest proportions in the Southern States, especially in irrigation areas. It is significant that during a succession of relatively dry years in Queensland, Noogoora burr not only maintained its hold but continued to spread. It was first recorded in Western Australia in 1949. An employee of a Northam flour mill noticed some strange burrs attached to a sack and fortunately was sufficiently interested to forward them to...
the Department of Agriculture for identification. These proved to be Noogoora burrs and a hurried visit to Northam disclosed that the sack contained more than 300 mature burrs. The markings showed that it had been used for several purposes including the transport of maize for stock food from Queensland to this State. Noogoora burr occurs profusely in many of the maize-growing districts and the presence of the burrs, therefore, was not difficult to explain.

Widespread publicity given to the discovery resulted in many reports of suspected plants and burrs. Fortunately in most cases other plants had been confused with Noogoora burr, but some very helpful information was obtained and plants were located at Nedlands, Harvey, Fremantle and Morley Park. Further burrs were found in an old sack wrapped around a box of butter sent to Bowgada and they were also detected in sunflower, maize and sorghums imported for parrot food. More recently a burr was submitted by a Dangin farmer who found it in straw packing around a stove purchased from a Perth store.

**DESCRIPTION**

Noogoora Station in Queensland, where the weed was first recorded in Australia, has provided the vernacular name.

Noogoora burr is a spreading annual attaining a height of six to eight feet, but sometimes flowering and seeding when less than a foot high. The young stems are mottled and the somewhat roughened leaves are shaped as shown in the illustration. They are three to six inches broad and have a stalk varying from one to five inches in length. The inconspicuous flowers are formed in clusters close to the stem. The fruits (burrs), half an inch or somewhat more in length are terminated by two erect or slightly curved beaks. The burrs are straw to brown in colour and each contains two flat seeds.

Noogoora burr is sometimes confused with the related Bathurst burr (*Xanthium spinosum*) but this is a smaller plant with more deeply lobed leaves and smaller burrs bearing hooked spines, but without the two beaks. It also has trifid spines at the base of the leaves.

**SIGNIFICANCE**

Although of some importance as a weed of summer crops such as maize, Noogoora burr is of most significance in sheep country. The dense growth smothers pasture species, seriously affecting the carrying capacity and at times preventing sheep from gaining access to watering places. A more tangible and very substantial loss is caused by the burrs becoming entangled in wool. They are of such a nature that they cannot be removed by the mechanical processes adopted, and carbonising with acid is necessary. A number of years ago it was stated that as much as 16% of the Queensland wool clip contained burrs, necessitating an expenditure of a quarter of a million pounds for treatment. The direct loss to wool growers at the present time would be considerably higher, without taking into account reduced pasture production and cost of control measures.
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In cattle areas the losses are of a different nature as seedlings of Noogoora burr have caused many fatalities among cattle. In October 1929, eleven of a herd of 55 dairy cows died within a few days at Bundaberg and 42 head were lost on a farm at Goomeri. Deaths due to Noogoora burr poisoning have been recorded from many localities in Queensland and in September 1949, 112 cattle valued at £1,300 were lost in two days in the Gympie district.

Noogoora burr poisoning was studied by Seddon and King (1937) at the Veterinary Research Station, Glenfield, N.S.W. Their experiments showed that the plant is poisonous to pigs, sheep and cattle but only at the early growth stages when the seed-leaves or cotyledons are still present. The lethal doses indicated were 2% of the body weight for pigs with somewhat less for calves and a considerably greater amount for sheep. The poisonous principle appeared to be confined to the cotyledons and a lethal dose caused death in from 20-48 hours. Animals became excited with jerky movements and stilted gait. Details of symptoms and post-mortem examinations are described by Kenny, Everist and Sutherland (1950).

A glucoside has been isolated from a species of Xanthium, occurring in the seeds and young plants at the cotyledon stage. It is likely that Noogoora burr contains this type of toxin. Marsh (1924) states that some beneficial results followed the administration to affected animals of oils and fats such as linseed oil.

Noogoora burr is a primary noxious weed for the State.

CONTROL

Being an annual, all control measures have as their objective the prevention of seed formation, the method depending on the extent and location of the weed. As yet, only odd plants have been found in this State and destruction by hoeing and burning has been possible. Sites where plants have seeded should be kept under observation for a number of years with a view to locating seedlings resulting from delayed germination. These usually appear following rains in the spring and summer.

Noogoora burr is susceptible to the 2, 4-D or hormone-like herbicides, small plants being killed by one pound of acid equivalent per acre. Some success has been obtained with power spraying in Queensland, but there are many practical difficulties when such extensive areas are involved. Besides the cost, labour is scarce and the movement of equipment is made difficult by steep banks and soft soils.

During the period 1935-1939 large numbers of the seed-fly (Euaresta aequalis) were introduced from the United States and liberated in various parts of Queensland, but the results were very disappointing as it showed no inclination to increase or spread. The possibilities of biological control are still being pursued, and such a method would be of inestimable value comparable in significance with Cactoblastis for the prickly pear.

As a time when only a few plants have been found in Western Australia, it is very interesting to recall the following statement concerning this weed made by Mr. J. H. Maiden when Government Botanist of New South Wales.—

"I was talking to Mr. F. M. Bailey, the Government Botanist of Queensland, a few days ago (this was written in 1896) about Noogoora burr. He said, 'I well remember when £50 would have stamped it out in my colony, now it would take untold wealth.'"

"In 1899 I estimated that in New South Wales, £1,000 judiciously spent would entirely free us from the pest: without any desire to be sensational, I stated that, if allowed to spread unchecked, it would in
a few years deteriorate our territory to the value of a million of money. Today—this is probably not very wide of the mark.”

Let us benefit from the costly experiences in other parts and prevent this weed from becoming established. There are many ways in which the burrs can be introduced. They have been found in maize imported for stock food and also in birdseed such as maize, sunflower and sorghum. Sheep have carried burrs in their wool and they have also been present in imported wool and hides. Other means of dispersal include used sacks and packing material as well as the mulch around garden shrubs. Careful inspections are being maintained to prevent introduction by these means and any plant suspected of being Noogoora burr should be reported to the Department of Agriculture.

ACKNOWLEDGMENTS

H. R. Seddon and R.O.C. King (1937)—N.S.W. Department of Agriculture Veterinary Research Report No. 7.


BULL REGISTRATION

The Minister for Agriculture (Mr. E. K. Hoar) has drawn attention to the requirements of the Dairy Cattle Improvement Act, relative to the registration of bulls.

The Act provides that all bulls in the South-West Division of the State must be registered, with the exception of pedigree beef strain animals kept solely for beef production, which may be exempted on application to the Director of Agriculture.

Certified pure-bred bulls are registered on payment of a fee of 10s. for life, but grade bulls must be registered annually and a fee of 5s. paid with each application.

Registrations of grade bulls were due on January 1, 1955, and the Act stipulates that owners who have not complied with the regulations by January 21, are liable to a penalty not less than £20.

The Department should be notified immediately of the death or transfer of any registered bull.