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CLASSIFICATION AND BOTANICAL DESCRIPTION OF IMPORTED VARIETIES OF HOPS (*HUMULUS LUPULUS*) IN NELSON, NEW ZEALAND

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SUMMARY

Imported varieties of hops grown in hop gardens in Nelson, New Zealand, under 15 different varietal names are identified as consisting of only 4 English and 1 North American variety. Botanical descriptions of these 5 varieties are given.

INTRODUCTION

It is generally accepted that the first varieties of hops introduced into New Zealand by the early settlers came from England. They were grown in Nelson hop gardens under the names Early Brown Bine, Green Bine, White Bine, Fuggle, Kent Hop, Scott's Hop, Duncan's Wonder, Late, Bumford, Grape, Cluster, Golding and Late Red. In 1897 the American Late Cluster variety—locally named the Californian variety—was imported from the Russian River Valley in California. The Californian variety rapidly replaced the other varieties in the commercial gardens because of its considerably greater yield under Nelson climatic conditions. By 1950 a few acres of Green Bine and Bumford remained, only where the Californian could not be grown because of its susceptibility to black root rot (*Phytophthora cactorum*), and at the present time only occasional specimens of the previously grown varieties are found as remnants in long established hop gardens.

CLASSIFICATION OF THE VARIETIES

In order to classify the varieties of hops present in Nelson hop gardens, planting material was collected over the years 1951–53 from Green Bine and Bumford plantations, and also from the "foreigners" in Californian hop gardens known by the growers to be remnants of the varieties previously grown there. In 1954 this material was planted in a variety trial of two blocks of randomised plots of four plants of each origin at the Hop Research Station, Riwaka, Nelson, and during the following three years observations on botanical characters of the plants were recorded.

It was found that the hops of English origin consisted of four varieties only, each of which very closely resembled a variety cultivated in England

at some time. These four, together with the Californian variety, are described below. The varietal names chosen are those most commonly used in the Nelson district.

GREEN BINE (Fig. 1)

Synonyms—Fuggle, White Bine, Scott's Hop.

Under Nelson climatic conditions Green Bine is an early-maturing low-yielding variety. It is botanically identical to the English Fuggle variety (Percival, 1901; Beard, 1942) which is the main variety grown commercially in England at present. Its most characteristic feature is that the upper surface of the petiole is wine red for from 1 in. to 2 in. from its base.

BUMFORD (Fig. 2)

Synonyms—Late, Late Red.

Bumford is a late-maturing variety of hops of average yielding ability under Nelson conditions. Botanically it is one of the English true Goldings (*loc. cit.*) which is still grown in England. Its typical characteristics are that the youngest leaves are golden, turning green on reaching the adult stage, and that adult leaves are shiny.

CLUSTER (Fig. 3)

Synonym—Grape.

This variety is very late-maturing and low-yielding under Nelson conditions. It is identical to the old English Colgate variety (*loc. cit.*), which has passed out of general cultivation there. Characteristics are its lateness and its very rough, coarsely serrated leaves.

GOLDING (Fig. 4)

Synonyms—Kent Hop, Duncan's Wonder.

Under Nelson conditions Golding is an early-maturing low-yielding variety. Botanically it is one of the English early true Goldings (*loc. cit.*) which is still grown in England. As a true Golding it is most difficult to distinguish from the Bumford, but its youngest leaves are not golden and its adult leaves are flat and dull whereas those of the latter variety are undulate and shiny.

CALIFORNIAN (Fig. 5)

Synonym—American Late Cluster

Compared with the four varieties described above, the Californian is a prolific mid-season variety under Nelson climatic conditions. It is botanically identical with the American Late Cluster variety which is the main variety grown commercially along the Pacific Coast of the U.S.A. at the present time. Its typical feature in distinction to the varieties of English origin is that its nodes are hairy.

Botanical descriptions of these five imported varieties are summarised in Table 1. Typical branches, leaves and hops are illustrated in Figs 1–5.

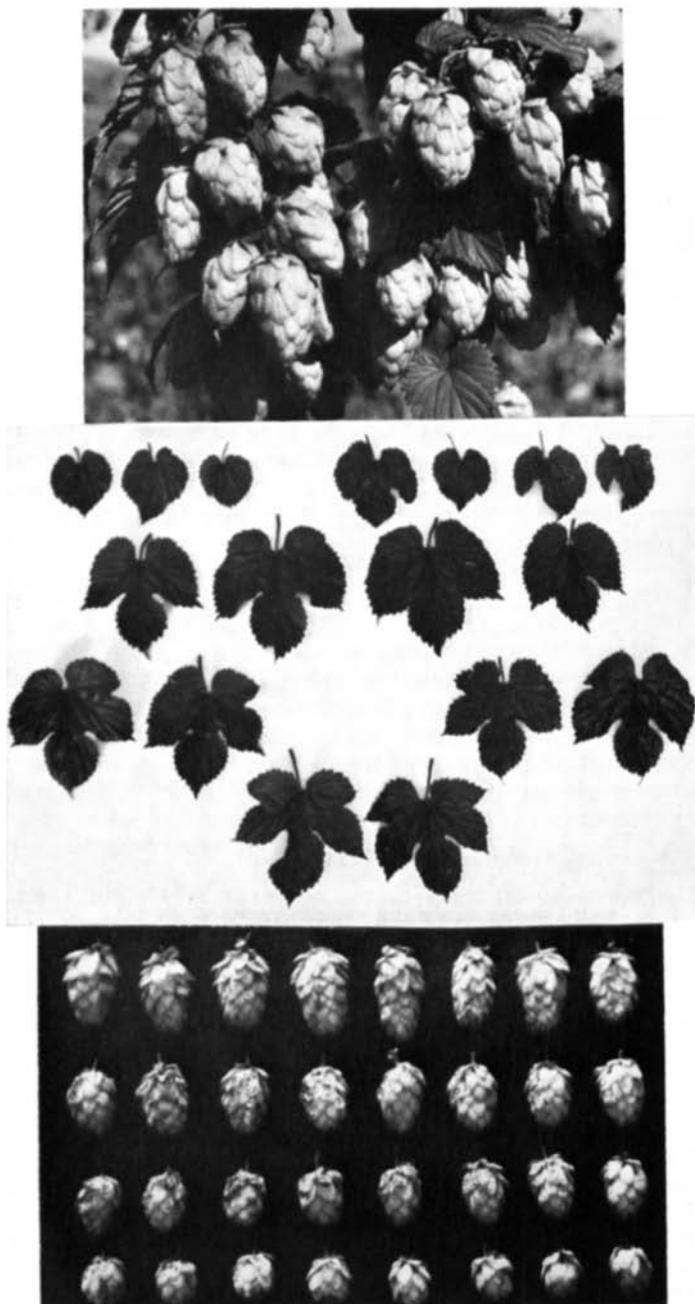


FIG. 1.—Green Bine.



FIG. 2.—Bumford.

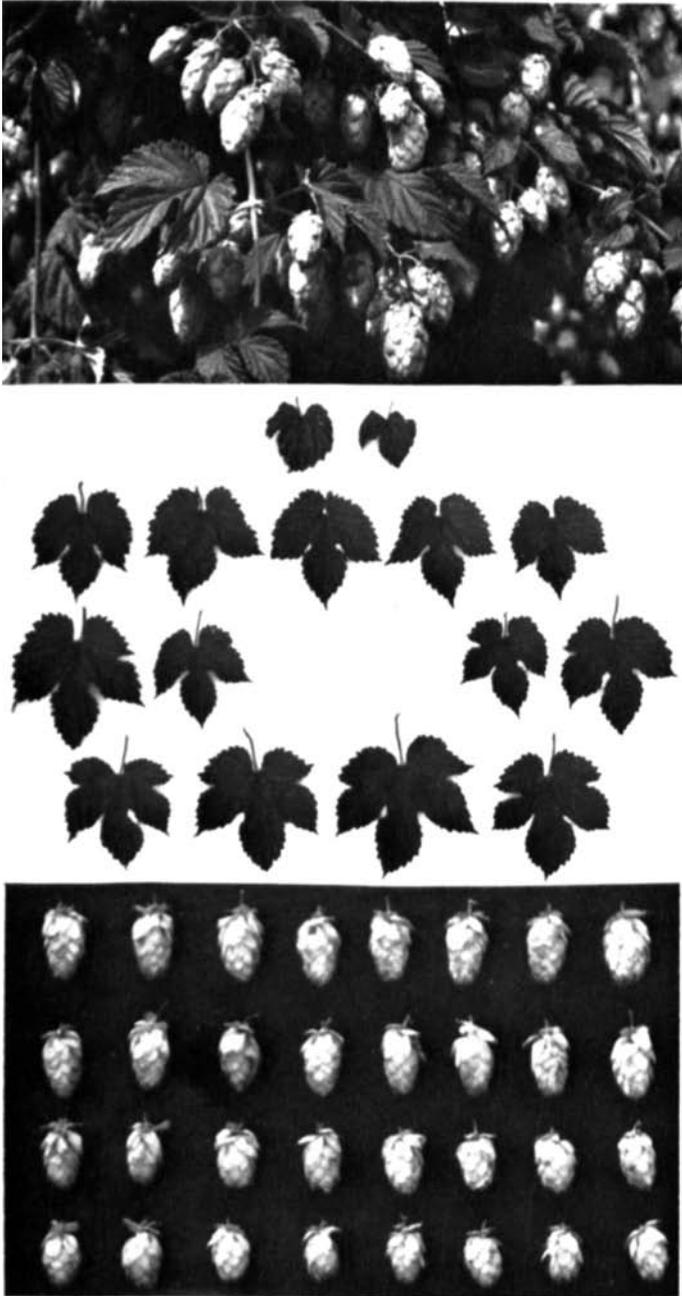


FIG. 3—Cluster.



FIG. 4.—Golding.



FIG. 5—Californian.

TABLE 1.—Description of the Hop Varieties

Variety	Bine	Leaf at 5 ft—6 ft above ground level	Petiole	Hop	Character by Which Most Readily Distinguished
GREEN BINE	Light green; smooth.	Dark green; dull; mainly 3-lobed, with lobes touching; leaf edges curling under; fairly smooth.	Green; upper surface wine red 1 in.—2 in. from base.	Clustered; large; pointed; coarse; fairly firm; medium lupulin content.	Upper surface of petiole wine red for 1 in.—2 in. from base.
BUMFORD	Olive green; smooth.	Dark green; shiny; mainly 5-lobed, with lobes not touching; distinctly undulate; very smooth.	Green	Single; large; oblong; fine; firm; low lupulin content.	Youngest leaves golden, turning dark green on reaching adult stage; leaf shiny
CLUSTER	Green; smooth.	Greyish green; dull; mainly 3-lobed, with lobes touching; leaf edges curling under; very rough.	Green	Well clustered; small; pointed; fine; fairly firm; low lupulin content.	Leaf very rough; serrations of leaves coarse.
GOLDING	Olive green; smooth.	Dark green; dull; mainly 5-lobed with lobes not touching; flat; very smooth.	Green; occasionally over 1 in. of upper surface bright red.	Single; small; roundish-oblong; fairly fine; firm; low lupulin content.	Similar to Bumford, but youngest leaves not golden, and leaf not shiny and undulate; but dull and flat.
CALIFORNIAN	Reddish green; rough.	Green; dull; 3- or 5-lobed, with lobes not touching; undulate; smooth.	Green; occasionally over 1 in. of upper surface purplish.	Clustered; large; pointed; fairly fine; fairly firm; high lupulin content.	Nodes of main bine hairy.

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