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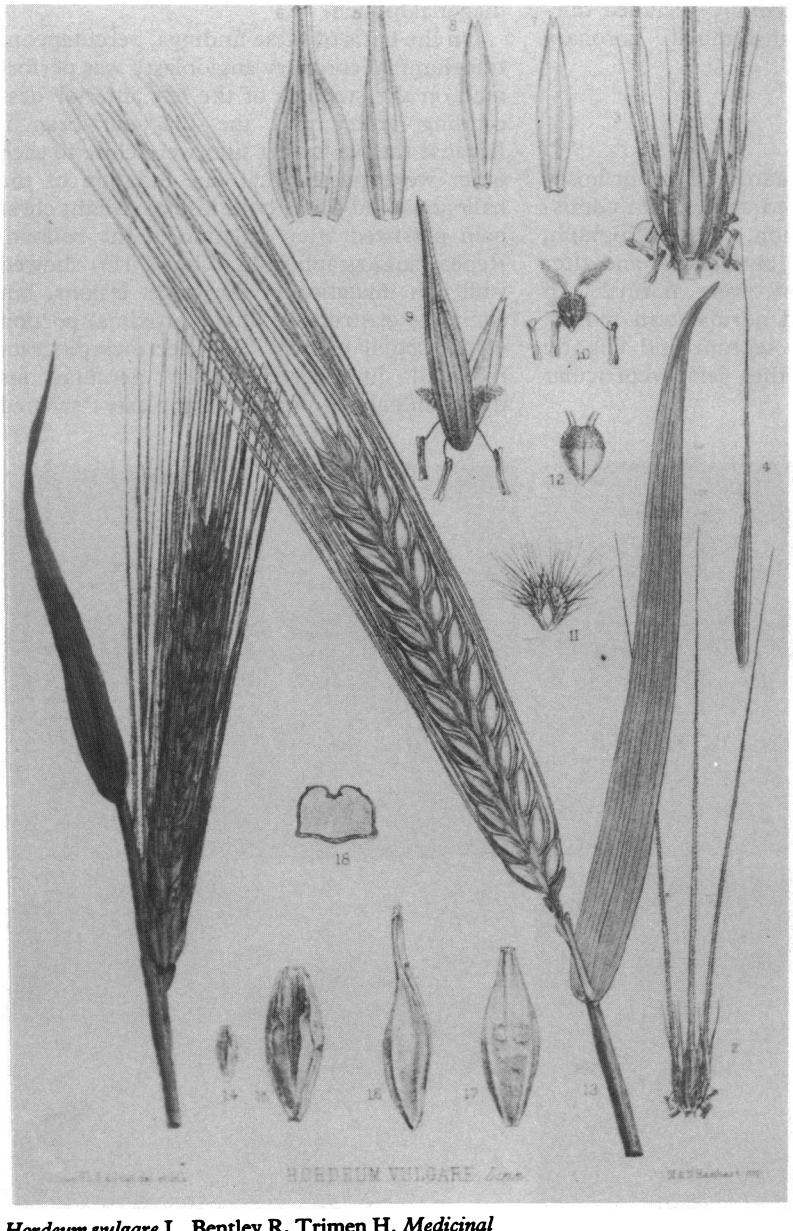
PLANTS IN CARDIOLOGY



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Lignocaine

In 1932 Professor Hans von Euler pioneered a new concept when he sought chemical differences between genetically different types of plant. For his first study he chose a chlorophyll defective mutant of barley, *Hordeum vulgare*, and isolated a compound $C_{11}H_{14}N_2$ which was not present in normal barley, or in other green plants that he tested. He called the compound gramine after the plant's family Gramineae and he thought that it was 2-(dimethylaminomethyl)-indole. But when his assistant Holger Erdtman synthesised this compound in 1935 it proved to be isogramine not gramine, which is 3-(dimethylaminomethyl)-indole. When Erdtman tasted the isogramine he found that it anaesthetised his tongue which gramine did not. But isogramine was too irritant to use as a local anaesthetic and although Erdtman and Nils Lofgren with the support of Astra synthesised several analogues they also could not be used clinically.

The work then stopped for some years but Lofgren later resumed the project, again with Astra's support and in 1943 he produced Xylocaine, which after extensive testing was marketed in 1948. Its generic names are lignocaine and lidocaine.

Gramine was, however, also isolated by Russian workers in 1935 from the great reed *Arundo donax* L. This plant claimed attention because camels refused to eat it because of its bitter taste.

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