

characteristics of what is vaguely termed a "good singing" voice.

From the thousand and more oscillograph records a hitherto unreported frequency in the band of sound waves from E flat to F sharp of the last octave on the piano has been discovered in the well-produced voices of men. This is the "ring" of the voice, and occurs in considerable amounts, and at the same frequency, regardless of the fundamental pitch or the vowel being sung.

All the attributes of good vocal quality, declares Mr. Bartholomew, tend to appear when the throat is enlarged, as many voice teachers have long known. Such teachers use many types of mental imagery to help the pupil relax the swallowing muscles that tend to tighten the throat. Different types of imagery have equal success and appear to help in building up psychological aids in securing correct muscular settings, which is often awkward for the beginner.

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AGRONOMY

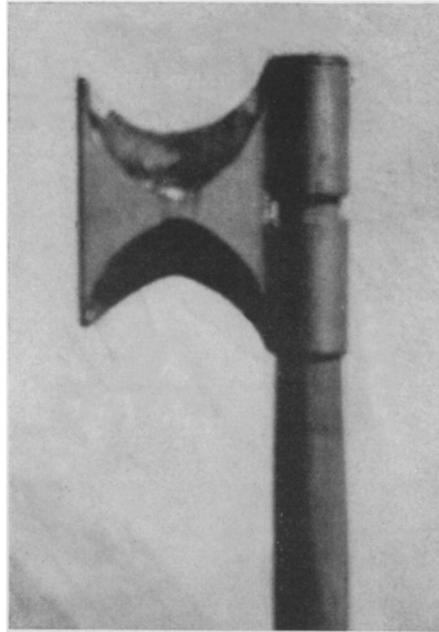
Conservation Would Withdraw Same Acreage as A.A.A.

SOIL conservation rentals, to withdraw erosion-threatened land from the plow and put it into pastures, trees or other permanent vegetation, will retire just about the same number of acres as were taken out by the restriction agreements under A.A.A., if new legislation now pending before Congress is enacted.

At a conference in his office, Secretary of Agriculture Wallace disclosed this estimate, based on a survey made for him by the Soil Erosion Service last autumn, when the complete destruction of A.A.A. was not even thought of.

The survey was made of lands on unsafely steep slopes, now in the three big money crops, wheat, corn and cotton. The slopes are in the classes called C and D by the Soil Conservation Service. C slopes are those that must be put into grass to prevent their rapid ruin through erosion. D slopes cannot be saved even by permanent grass, but must be held by deeper-rooted trees.

The survey indicated that 35 million acres of the three crops are now being grown on such slopes. A.A.A. withdrawals in 1935 amounted to 30 million acres; in 1934 they were 35 million acres. The net result of the new scheme



LIKE A LICTOR'S AX

FORESTRY

New Foresters' Tool Looks Like Symbolic Fascist Ax

A NEW-TYPE tree pruning tool looking like the symbolic ax that thrusts its blade from among the bundle of rods in the Fascist emblem will soon be appearing on the shoulders of foresters going into American woods so that they can aid young trees to grow up straight and produce knot-free lumber.

The steel blade, however, will be a real working tool, not a political emblem. And it will not be an ax, for it will be sharpened not on its outer edge but at top and bottom.

The tool is the invention of J. H. Rich of Massachusetts State College. It consists essentially of a rectangular piece of steel, with half-moon-shaped concavities cut into top and bottom sides. These are whetted to razor edges. The blade is socketed on the end of a pole.

In use, the upper edge is first set against the under side of the branch to be pruned, and the forester gives it a quick thrust. Then he hooks the lower edge over the top of the branch, and gives it a firm pull. The two cuts meet, shearing the branch off cleanly. The forester swings the pole a little to one side so that the falling branch will not strike him, and goes after the next branch.

The tool is intended for use on small branches only, and will not replace the pruning saw for larger-sized jobs. But the inventor claims that it is much superior to the saw within its scope, particularly on branches from six to seven feet up the trunk.

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VETERINARY MEDICINE

New Hog-Cholera Vaccine Promises Better Results

PIGS WILL be better protected against their worst disease, hog cholera, by a new vaccine now under investigation by research workers of the U. S. Department of Agriculture. Crystal violet, a chemical not hitherto used in preparing such vaccines, appears to be the key to its greater effectiveness.

In preparing hog cholera vaccines in the past, three other chemicals have been used: glycerin, formalin and phenol. Vaccines generally are made by adding to blood serum containing the virus of the disease some chemical that will weaken its power to harm, yet not de-

of acreage withdrawal, pointed especially at soil conservation rather than the elimination of price-depressing surplus production, would be to shift the uncultivated acres to places where they would do the most good to the nation's land itself.

Even these withdrawals will not wholly meet the situation produced by the destruction of America's foreign markets through ultra-nationalistic measures taken by European governments, Secretary Wallace indicated. To cut our production to this level, 50 million acres would have to be taken out of the major farm crops. Hope that such drastic action will never be necessary was expressed by the Secretary, who looks for a return, sooner or later, of "world sanity."

Even more sweeping cuts in acreage, to meet the soil erosion and soil exhaustion problems to the very limit, have been proposed by persons not connected with the Government. These have run as high as 30 per cent. of all our crop lands, and would mean reductions on the order of 100 million acres. This figure is not thought of as a serious possibility by Secretary Wallace.

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