the sprouts come from pieces of crown and from root ends which are exposed to the light, the sprout can be eliminated by careful practise in eradication. Cutting of the roots would seem to be more effective than pulling: ordinary care will prevent the leaving of pieces of crown in grubbing, while only extraordinary care and considerable work can prevent the leaving of exposed root ends after pulling. In the past it has been the custom in this state to pull whenever possible and to grub only as a last resort. It looks as though the practise should be reversed. The initial work may be a little more expensive, but it will be cheaper in the end if it eliminates the sprouts which make up the great bulk of the growth on eradicated areas.

According to the figures obtained the eradication crews attained an average efficiency of almost 99 per cent. on old bushes and seedlings. If the sprouts can be eliminated the reduced leaf surface should certainly give a large measure of protection if not complete exemption from the disease.

E. G. CHEYNEY

UNIVERSITY OF MINNESOTA

THE AMERICAN CHEMICAL SOCIETY. XI

DIVISION OF AGRICULTURAL AND FOOD CHEMISTRY

C. E. Coates, *chairman*

T. J. Bryan, *secretary*

Louisiana molasses and syrup: C. E. COATES.

The use of refined edible lactic acid in food products: GEORGE DEFREN.

Preliminary feeding experiments with pigs to determine the nutritive value of the amino acids of the proteins of feeding stuffs: H. S. GRINDLEY.

Proteins of pecans: C. T. DOWELL.

Body fat of hogs fed on peanuts: FRED H. SMITH.

An accurate and rapid dry combustion method for the simultaneous determination of soil organic matter and organic carbon: J. W. REED.

The actual carbon content of soil organic matter and its relation to the use of conventional factor: J. W. REED and R. H. RIDGELL.

Limitations of the white rat as an experimental animal: W. D. RICHARDSON.

Mammalian vs. Avian dietary experiments: W. D. RICHARDSON.

The ether insoluble hexabromides of pure and adulterated linseed oils: HERBERT BAILEY and W. D. BALDSIEFEN. Several modifications of the various methods which have been proposed from time to time for the determination of the hexabromide value of oils have been studied. As a result of this work a new method has been developed which, it is believed, is as accurate as any of those previously proposed, and more simple than most of them. The hexabromide values of a number of samples of pure linseed, soya bean, and other oils, and mixtures of linseed with soya bean oils have been determined.

The relative nutritive value of alfalfa as a supplement to a diet of corn and tankage, and kaffir and tankage: J. S. HUGHES and E. F. FERRIN.

Data on bacterial counts of beverages in Missouri: JAY BARTON. Excluding 23 samples from 3 different plants which were in an appalling condition, the average count for the remaining 203 samples is 71 per cubic centimeter. The three worst plants were in towns of population 5,000 or less. The average count of all samples from each of three other plants was between 100 per cubic centimeter and 150 per cubic centimeter; these plants were located in cities of 40,000 or more. *B. coli* were found in 8 samples collected from 5 plants. Only one of these plants was in a small town; the other four were in cities of 75,000 or more. *B. coli* were found in all of the products from one company manufacturing imitation wine. "Fancy" ginger ale (4 samples), grape juice (8 samples) and dealcoholized beer (80 samples) run uniformly good, about half of the samples containing no organisms growing at 37° C., and not more than 5 per cent. containing more than 10 per cubic centimeter.

The occurrence of hydrocyanic acid in Sudan grass and its effect on cattle: C. O. SWANSON. Samples of Sudan grass taken from a pasture where cows were feeding showed that large amounts of hydrocyanic acid was present, but no ill effects were observed. Sudan grass which was reported to have killed cattle did not apparently contain more of the HCN than the grass from the pasture mentioned. Conditions which favor enzyme action liberate hydrocyanic acid. Frosted Sudan grass gave a stronger test than that not frozen, but the HCN disappears very rapidly when the plant thaws out and dries. Ensiloing favors the liberation of

the HCN. The tests must be made on the grass immediately after cutting, as the HCn was generally absent after the grass was wilted.

Effects of alfalfa on the sulphur content of the soil in comparison with grain crops: C. O. Swanson and W. L. Latshaw. Samples were taken from 86 fields and analyzed for sulphur. The plan was to select fields which had been in alfalfa for a long time, twenty to thirty years. Near these fields were found soils of the same type which were in native sod or had been cropped to grain since broken, about forty years. On the basis of annual rainfall the state of Kansas may be divided into three sections: humid, where the rainfall is 30 inches or more; the subhumid, where the rainfall is less than 30 inches but more than 22; the semi-arid, where the rainfall is less than 22 inches. In the humid section the average per cent. of sulphur was: alfalfa soil, 0.029; virgin sod, 0.035; cropped soil, 0.027. In the sub-humid section: alfalfa soil, 0.043; virgin sod, 0.045; cropped soil, 0.041. In the semi-arid section: alfalfa soil, 0.035; virgin sod, 0.038; cropped soil, 0.027. The growing of crops has decreased the sulphur content of the soil, using the virgin sod as the basis of comparison: Alfalfa, 16.5 per cent.; grain, 20 per cent. This is for the humid section. For the sub-humid section the losses are: alfalfa, 4.7 per cent.; grain, 9.3 per cent.; for the semi-arid section the losses are: alfalfa, 7.4 per cent.; grain, 30 per cent. The sulphur content of the soil is approximately the same as that of phosphorus. Chemical analyses of these soils do not show any appreciable loss of total phosphorus, while the loss of sulphur is next to nitrogen and carbon in magnitude.

The preservation of fish frozen in chilled brine: (I.) *The penetration of salt:* L. H. Almy and E. Field. Several species of fish were frozen by immersion in sodium chloride solutions of different concentrations and temperatures and for varying periods of time. Salt penetrated the skin and superficial tissue under all experimental conditions. Freezing of fish in brine at the temperature near which ice begins to separate from the solution did not prevent the penetration of salt. Though it was possible to detect penetrated salt by chemical means, the amount of salt absorbed was not sufficient to influence the taste of the cooked product. A study is being made of the relative keeping of fish frozen in air and in brine.

Research on hypnotics: E. H. Volwiler. The most commonly used hypnotics at the present time are barbital, formerly known as veronal, luminal, adalin, diallylbarbituric acid and several others. Of these compounds, barbital is by far the most commonly used and is manufactured in this country in very large amounts. Recently some research has been carried on by The Abbott Laboratories, which is the principal manufacturer of barbital, to produce a better hypnotic. Among others, dibutyl barbituric acid and benzyl-ethyl barbituric acid have been prepared. Di-butyl barbituric acid shows promise of being valuable, its toxicity being somewhat less than that of barbital and several objectionable side effects being eliminated.

Wood alcohol and prohibition: Charles Baskerville. Wood methyl alcohol poisoning is a unique problem in that it involves not alone physiological changes and technical matters having to do with production and distribution of the toxic agent, but sociological factors as well, for it is closely knit to prohibition. The pure substance so closely resembles ethyl hydroxide that it requires an expert chemist to determine the difference. As ethyl hydroxide was the constituent of the quondam beverages, the name without the qualifying words is liable to be misleading to those not informed. In view of that, and numerous other factors, it is urged that the name "methyl hydroxide" or "methanol" be applied to wood alcohol, and the name "ethyl hydroxide" or "ethanol" be applied to the so-called grain alcohol in an effort to render the use of the word *alcohol* itself obsolete. This can not be accomplished by legislation or immediately, but by common agreement in usage, especially in the chemical and pharmaceutical professions.

Charles L. Parsons,
Secretary

(To be continued)

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