WASHINGTON NOTES

Calcium Arsenate Demand

The all-absorbing topic of the moment seems to be calcium arsenate. On January 18, the Senate ordered to be printed the report prepared in compliance with Senate Resolution No. 377 passed by the Congress authorizing and directing the Bureau of Entomology, Department of Agriculture, and the United States Geological Survey, Department of the Interior, to investigate the available supplies of arsenic in the United States.

Briefly summarized, the situation as we see it is somewhat as follows:

During 1922, 8000 short tons of calcium arsenate, requiring about 3200 short tons of white arsenic, were consumed on cotton in controlling the boll weevil. It has been estimated that the consumption of calcium arsenate on cotton in 1923 will be between two and three times the quantity used in 1922, or, in terms of white arsenic, between 6400 and 9600 short tons, and that the United States requires about 8450 tons of white arsenic for purposes other than in the manufacture of calcium arsenate. The best information obtainable from governmental sources indicates that between 15,000 and 18,000 short tons of white arsenic will be required to meet our 1923 demand. The task is not a simple one.

It is difficult to obtain accurate figures of the world's total production of white arsenic, but available information shows that in the past not more than 50,000 tons were produced in the world during any one year.

The stocks of domestic white arsenic on hand October 1 (at smelters), and contemplated production from then until May, 1923, have been estimated by V. C. Heikes, of the Geological Survey, at 4630 short tons. To this quantity must be added imports which, for the first nine months of 1922, were about 3500 short tons. Only 900 tons of this amount, however, were imported during the third quarter of the year. Imports at this same rate should add an additional 1500 to 2000 short tons of white arsenic by the first of May, 1923. Imports, stocks, and potential production up to May, 1923, will, therefore, approximate 7500 tons of white arsenic. There is also a possibility of domestic smelters increasing production.

Information cabled to the Department of Commerce in November, 1922, indicated that practically no stocks of white arsenic were available for export from Mexico, Spain, and Japan; also, that the monthly output of 130 tons in Japan was contracted for up to the end of April, 1923.

The following table shows the domestic production of white arsenic and imports of all forms of arsenic from 1910 to 1922:

White Arsenic

Year	Production Short tons	Consumption Per cent	Imports, All Forms[1] Short tons	Apparent Consumption Short tons
1910	1,497	22.6	5,139	6,636
1911	3,132	43.3	4,096	7,228
1912	3,141	33.8	6,156	9,297
1913	2,513	34.8	4,701	7,214
1914	4,670	56.3	3,628	8,298
1915	5,498	63.3	3,183	8,681
1916	5,986	73.5	2,163	8,149
1917	6,151	60.9	3,955	10,106
1918	6,323	48.6	6,689	13,012
1919	6,029	48.0	6,540	12,569
1920	11,502	59.5	7,820	19,322
1921	4,786	48.9	5,012	9,798
1922	10,947	70.6	3,500[2]	15,500[3]

[1] Includes imports of white arsenic, arsenic sulfide, metallic arsenic, and arsenic acid. Can be considered chiefly *white arsenic*.
[2] Imports for first nine months of 1922.
[3] Estimated on basis of nine months' imports.

The consumption of calcium arsenate depends to a large degree upon the price the cotton farmer will receive for his cotton. It is the opinion of Dr. B. R. Coad, of the Department of Agriculture, that the cotton farmer during 1923 cannot afford to pay more than 18 cents per pound for calcium arsenate. This means that insecticide manufacturers must sell calcium arsenate to the dealers (middlemen) in the South at around 14 cents per pound. At this price, the insecticide manufacturers could not afford to pay more than 9 to 10 cents per pound for white arsenic. The bulk of domestic white arsenic, which can be produced by May, 1923, has been contracted for by insecticide manufacturers at net prices to the producer of about $8^1/_2$ cents per pound. Additional supplies of domestic white arsenic are bringing about 13 cents, and spot lots are selling around 15 cents per pound. The transactions at these higher prices are so small as to have little effect on the price of calcium arsenate.

It is undoubtedly true that the consumption of calcium arsenate could be materially increased if the prices were sufficiently low, but in view of the contract prices of white arsenic, it is impossible to see how the price of calcium arsenate can be less than 15 cents per pound delivered to dealers at southern points during 1923. Trade-journal quotations and manufacturers' advertised prices indicate that the price will be nearer 20 cents.

Resolution to Put Government in Chemical Business

On January 13 the Senate passed a joint resolution appropriating $10,000,000 to permit the President to buy and sell to the farmers, at cost, nitrate of soda and calcium arsenate. While the initial appropriation is $10,000,000, the President is permitted to use the money as a revolving fund, so that the sales of these commodities to farmers may be pyramided and the business conducted on a large scale. The House has not yet taken action on this resolution.

Manufacture of Furfural

New uses for furfural made from corncobs are being sought by the Bureau of Chemistry, since it is now possible to produce it at a price that makes it of interest to a number of industries. Experiments are also under way on the manufacture of furfural from other agricultural wastes, such as hulls of rice, buckwheat, cottonseed, and peanuts. Peanut hulls yield less than one-third the amount of furfural that would be expected from a comparison of their pentosan content with that of corncobs. The yield with steam alone is so low as to preclude any commercial consideration of the use of peanut hulls as a source of furfural by the process as used for corncobs. There are indications that this yield may be considerably increased by the use of certain catalysts, and their effect will be studied.

Muscle Shoals Development by the Government

The Army Bill as passed by the House carries funds for the completion of Dam No. 2 and for the installation of eight power units which are all that the War Department considers will be needed for several years at Muscle Shoals. The bill appropriates $6,998,000 for work during the next year and in addition authorizes the Secretary of War to incur obligations on contract to the amount of $10,501,200. The bill is so worded that the money appropriated can only be used for the completion of the dam and installation of locks and hydroelectric machinery, and not for general construction. Development of the Muscle Shoals project by the Government, without regard to pending offers by Henry Ford and others, is bound to meet with stubborn resistance on the floor of the Senate.

Bureau of Standards Has Biggest Testing Machine in the World

A crushing force equal to the weight of fifty loaded coal cars of a hundred tons each can be exerted by the largest testing machine in the world which is now being installed at the Bureau of Standards. This machine has been in use for several years at the branch laboratory in Pittsburgh and has recently been moved to the main laboratory in Washington, D. C.

The machine will continue to work on the specimens for the towers of the Delaware River Bridge now under construction at Philadelphia. After that it will be used on the remainder of seventy-two steel columns which were being tested at Pittsburgh. It has recently been used for tests on forty-five samples of brick walls laid in different ways and with different kinds of mortar.

Such tests result in a great saving of money. It is believed that by careful experimental work, a method of design can be found which will allow the strength of steel columns for bridges and buildings to be calculated before they are built.

Standards Adopted by Department of Agriculture

Standards for condensed or evaporated milk, butter and renovated butter, ginger-ale flavor and ginger ale, cacao products, cacao butter, breads, cayenne pepper, and oil of cassia, as recommended by the Joint Committee on Definitions and Standards, have been approved by the Secretary of Agriculture for the guidance of officials in the enforcement of the Federal Food and Drugs Act.

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