be published in English? Germany has furnished public funds when the publisher of technical data was not able to sell enough copies to make a profit. Can't the English people do as well?

The population of Germany was less than 67,000,000 before the war, and suppose that we consider the German-speaking people to be 100,000,000, we find that the United States of America alone has over 100,000,000 people. If we add to this the British Empire with about 438,000,000 we find it likely that about five times as many people speak English as speak German. There is more reason to have the world's scientific literature in English than to have it in German.

We, as biologists, do not realize how completely Germany had our scientific confidence until we pick up a work like the "International Catalogue of Scientific Literature," published in London. Turning to section L of this index, which is general biology, we find that of the 286 journals being quoted from before the war, 169 were German, 49 English, 25 Russian, 14 French, 10 Dutch, 8 Danish, 6 Hungarian, 3 Polish and 2 Swedish. In the German list have been placed the 20 Austrian journals, which are essentially German, 5 printed in Switzerland and 2 in Poland. Of the 49 English journals, 36 are printed in the United States. The French journals are scattered. Three are printed in Switzerland, two in Russia and one in Poland.

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A FLOWING ARTESIAN WELL AT WINSLOW, MAINE

Winslow, Maine, is situated on the east bank of the Kennebec River about 83 miles north of Portland. It is directly opposite the city of Waterville, and the buildings of Colby College look across the river upon the artesian area to be described.

The Hollingsworth & Whitney Company, on whose property the flowing well is, has drilled seventeen wells in the last nineteen years. The first series was drilled in 1899 and is described in Water Supply Paper 223.[1] At this time there were seven wells from 110 to 125 feet deep.[2] These are said to have gradually filled with sand, until in 1906 they were about 90 feet deep. At this time they were abandoned because of insufficient supply for the purpose desired and river water substituted.

Since the paper referred to above was written, and especially in the last five years, the company has shown renewed interest in drilled wells. In 1913–'14 four wells were drilled with depths of 240, 250, 277 and 260 feet; in 1916 two, with depths of 306 and 269; in 1917 most of the wells drilled in 1899 were again brought into use; and in 1918 four wells were added which were 315, 286,308 and 317 feet in depth. The total water supply of these wells, by pumping, is estimated at 275,000–300,000 gallons in 24 hours. The casing, in most instances at least, is six-inch. The water is utilized for making acid used in the manufacture of sulphite pulp.[3]

Successful drilled wells are rather common in the slate area of southern Maine; 88 per cent. of those undertaken furnish at least a gallon a minute according to Clapp.[4] Flowing wells in slate are far less common and when struck seldom furnish over three gallons a minute.[5] Previously to the one described below none were known in Kennebec county and probably none within a radius of over 50 miles. The well 286 feet deep drilled for the Hollingsworth & Whitney Company is 1918 is therefore of special interest since it is a flowing well. A photograph furnished me shows the water flowing from a vertical six-inch casing at a height of about three feet above the ground. This flow, without pumping, was estimated to be about 60 gallons per minute; certainly, as can be seen from the photograph,

[1] "Underground Waters of Southern Maine," by Frederick G. Clapp, with records of deep wells by W. S. Bayley, Washington, 1909.

[2] *Ibid.*, 154.

[3] Data kindly furnished by Mr. George H. Marr, engineer for the Hollingsworth & Whitney Company.

[4] *Ibid.*, p. 61.

[5] *Ibid.*, p. 35.

it is far above the average given by Clapp for wells of this type in Maine. So far as I can learn, no test was made to see how far above the surface the pressure would raise the water. An interesting fact is that the 315-foot well drilled in the same year was a flowing well until the 286-well was drilled; when this began to flow, the other ceased. It would seem, therefore, that these two, at least, have a common joint plane or system of joint planes as their reservoir. This is in spite of the fact that in the later wells care was taken to space the wells a hundred feet or more apart to avoid this very thing.

Conditions adjoining these wells are such that it is not strange that an occasional flowing well should be encountered. The mills are situated on a fragment of a terrace about 80 feet above sea level. Back of them is an abrupt rise of about 80 feet to another terrace. The face of the scarp is of clay, but the slate rises through the terrace at elevations above about 160 feet. Wells drilled in the face of the scarp strike ledge after passing through 10 or 15 feet of clay showing a gradual rise of the slate underneath the terrace[6] as though marking the bank of a pre-glacial valley of more mature development. A small stream flowing down the scarp shows the same feature. This rise of the slate ledge behind the mills offers as favorable conditions as could be expected for a flowing well in a region where the reservoir consists of the joint planes of a comparatively localized area, as is generally considered to be the case in wells of this type.

It may be of interest to mention briefly a well drilled recently for the Waterville Country Club located about four miles west of those just described and in the town of Oakland. This contrasts with the Winslow wells in that it is on the summit of an almost bare slate hill 440 feet high, the highest point for several miles. Yet a well drilled here yielded a little water at 10–15 feet, and a sufficient supply at 147 feet. It was decided to continue to 150 feet, and just before reaching that depth a copious supply was encountered which rises to within 15 feet of the surface.

[6] The present course of the Kennebec River through Waterville-Winslow is between vertical slate walls.

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SCIENTIFIC BOOKS

Principles and Practise of Milk Hygiene. By LOUIS A. KLEIN. Philadelphia and London, J. B. Lippincott Company. 1917. Pp. 320, with 40 illustrations.

The book is intended primarily as a text for students pursuing a course in milk hygiene, but should serve a much broader purpose. It presents a well-balanced and concise résumé of facts which have an important bearing on the production of wholesome milk.

The work of others is drawn upon liberally, rather than the author's own theories and experiences, and parts of the book are replete with valuable references. The subject matter is divided into nine chapters, namely; Physiology of Milk Secretion, Colostrum, Milk, Bacteria in Milk, Milk Defects, Influence of Disease upon Milk, Dairy Farm Inspection, Pasteurization, and Methods of Examining Milk. There is also an appendix of 18 pages on Methods and Standards for the Production and distribution of Certified Milk.

A large part of Chapter VI. is given over to a discussion of tuberculosis of cows and transmission of infection to man through the milk. The theories and experimental facts leading up to the present status of the controversy are illuminating from the standpoint of completeness and organization. The hand of the veterinary pathologist may be seen in the descriptions of symptoms and pathology of bovine diseases, especially of the udder and related organs.

Chemistry and bacteriology also receive their due share of attention. The restricted emphasis put on the bacteriological methods of controlling sanitary milk production will be perhaps somewhat disappointing to those who regard the enumeration of bacteria by the direct microscopic or the plating process as of inestimable value. Correspondingly undue em-