the temperature of the patient had fallen, he found the bacilli in groups of five to fifty. In three of these six cases the temperature of the patient did not rise again after it had fallen, and the bacilli found at the time of the fall of temperature, or shortly after, disappeared after three to six days. The bacilli have not been observed in other conditions, as shown by many control observations made of the sputa in cases of bronchial catarrh, pneumonia, tuberculosis, etc., and they have never been demonstrated in the blood under other circumstances.

Diagnosis of Influenza by the microscopical examination of the blood in obscure cases. Canon[1] has been able to diagnose obscure cases of influenza, especially where no cough or expectoration existed, by means of the microscopical examination of stained blood preparations. The reliability of the microscopical examination was demonstrated in six cases by culture control experiments — the bacilli in the cover-glass preparations being but few and isolated.

Morphology. The bacilli are very minute non-motile rods, one-half as broad as they are long (of the same width as B. murisepticus, about 0.2 μ) and occur in chains of three to four individuals.

Staining. The bacilli are stained by means of dilute Ziehl solution (carbolic acid, five per cent solution in distilled water, 100 cubic centimetres; alcohol, 10 cubic centimetres; fuchsin, 1 gram) or heated Löffler's methylene-blue, and, in consequence of the fact that the ends of the bacilli take up the stain more intensely than the rest of the organism (polar staining), they present the appearance, unless deeply stained (Canon), of diplococci when single, or of streptococci when several bacilli are united to form a chain. The bacilli do not stain well with basic anilins and the Gram method (Pfeiffer). They may be demonstrated in the blood of influenza cases as follows: A drop of blood flowing from the pricked finger tip, is brought in contact with a cover-glass and spread by means of a second cover-glass which is placed over the first. The cover-slips are then drawn apart, and we have two films of blood covering the surface of each, which we proceed to dry at room temperature. Place the cover-glass thus prepared five minutes in absolute alcohol, and from this into Czenzynke's solution (concentr. methylene-blue solution, 40 grams; one-half per cent eosin solution, in 70 per cent alcohol, 20 grams; aq. dest., 40 grams) for three to six hours at 37° C. On removal from the stain, wash with water, dry, and mount in balsam. This stain shows the red blood corpuscles red, the leucocytes and bacilli blue (Canon).

Cultivation of the bacillus of influenza. The bacillus requires 28° to 37° C. for its development. On 1.5 per cent sugar-agar Pfeiffer could not succeed in causing more than a second generation to grow, though minute characteristic colonies at first developed. On glycerine-agar Kitasato has succeeded in maintaining cultures alive up to the tenth generation. The colonies formed by the growth of the influenza bacillus on agar slant-cultures appear like minute watery drops, which are so small that they are easily overlooked. In a second culture, inoculated from the first, the tendency for the colonies to remain separate and distinct is more evident, this growth being regarded as perfectly characteristic. The colonies are observable by means of a hand-lens when 24 hours old.

In bouillon the growth at the end of 24 hours is poor, appearing first in the form of small particles suspended in the perfectly clear fluid. These small bacterial masses gravitate, forming a flocculent deposit and leaving the supernatant fluid clear. This mode of growth, as we know, shows them to be non-motile organisms.

Canon, in his first communication, stated that he had been unable to obtain a growth of the bacilli derived from the blood, either in bouillon, plain agar, sugar or glycerin agar. In his second publication[2] he describes a successful method he has employed for the isolation of the organisms. On account of the diminutive size of the colonies formed by the growth of the bacillus, their comparatively small number in the blood, and the fact that the blood in coagulating prevents a proper isolation of the colonies, Canon proceeded as follows: The use of Esmarch roll cultures was abandoned in favor of cultures on Petri dishes. Into the latter, not only was it possible to introduce a larger amount of blood and thus increase the number of colonies obtained, but also such cultures offered the advantage of being readily examined for the minute colonies of the bacillus by means of the microscope. The blood of influenza patients was obtained in the usual way from the finger-tip, which had been sterilized with sublimate and dried with alcohol and ether, and pricked with a needle or pen-point previously sterilized in the flame. An assistant watches that the blood as it wells forth does not coagulate, but that the drops are spherical in form. Eight to ten drops are smeared over the surface of the dish, and the latter placed at 37° C. The colonies are best seen along the margins of the smeared blood ("Impfstrich"), or in places where relatively little blood has been smeared.

Pathogenic qualities. Monkeys and rabbits are susceptible when inoculated with this organism. Guinea-pigs, rats, pigeons (Pfeiffer), and mice (Pfeiffer, Canon) are refractory.

George H. F. Nuttall, M.D., Ph.D. (Göttingen).,
Assistant in Hygiene and Bacteriology.
Johns Hopkins University and Hospital,
Baltimore, Md.

[1] Canon, P., Ueber Züchtung des Influenzabacillus aus dem Blute Influenzakranken (Jan. 21). Deutsche Med. Wochenschr., 1892, No. 3, p. 48.

[2] Canon, P., Ueber Züchtung des Influenzabacillus aus dem Blute Influenzakranken (Jan. 14). Deutsche Med. Wochenschr., 1892, No. 3, p. 48.

The Question of the Celts.

It would interest me very much, and I believe it would many readers, if Dr. P. Max Foshay will adduce any positive evidence, linguistic, craniological, or artistic, to show, 1, That we have any means of deciding about the language of the Ligurians; 2, That the descendance of the Auvergnats from the Ligurians can be traced; or, 3, That the Euskarian dialects are related to the Ural-Altaic group. According to Dr. Heinrich Winkler, probably the highest living authority on the Ural-Altaic languages, the Euskarian or Basque language has absolutely no relation to any member of the group.

D. G. Brinton, M.D.

Philadelphia, March 29.

AMONG THE PUBLISHERS.

In the next number of *The Illustrated American*, No. 111, dated Saturday, April 2, will be commenced a series of illustrated articles by Professor Warren K. Moorehead, on the ancient and extinct race of people known as the Cliff Dwellers, formerly inhabiting that part of the country of the upper Colorado, the San Juan, and its tributaries. This scientific expedition has been sent out under the auspices of *The Illustrated American*. The progress and result of this expedition will be published from time to time in the columns of that excellent weekly.

— F. A. Davis, Philadelphia, has recently issued a book, by Hartvig Nissen, entitled "A B C of the Swedish System of Educational Gymnastics." Mr. Nissen is instructor of physical training in the public schools of Boston, and has been connected in a similar capacity with many of the leading educational institutions of this country and Europe. Since the Swedish system of educational gymnastics has been introduced into the public schools of Boston, it has become a necessity to have a practical hand-book, both for the teachers and the many homes where gymnastics are practised. It is with the purpose of giving plain answers to the most frequent questions that this book has been written.

— With the April number the *Review of Reviews* enters upon its second year. It has had an exceptional, if not an altogether unique, history. One year ago it was known only to a few discriminating readers, and its subscription list and news-stand sales required only a few thousand copies. Its edition the present month is 70,000 copies, and it is eagerly read in every State and Territory in the Union and in every part of Canada. No extraordinary efforts have been made to push the magazine. There has been very little canvassing done for it; no chromos have been given to its subscribers; no special inducements, such as an encyclypædia or a parlor organ thrown in as a gratuity or offered at half-price, have been offered by the publishers. The magazine