

A MICROSCOPE FOR COMPARISON

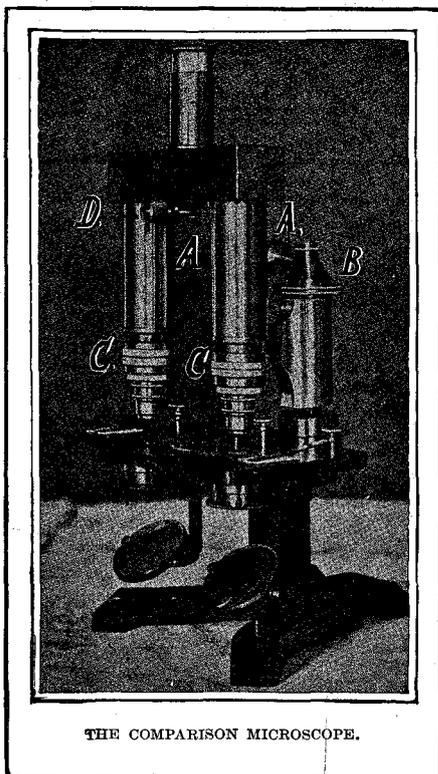
THE DIRECT observation of two microscopic objects so that they will appear to be side by side, in the same field of view, is made possible by the new "double-field" or "comparison" microscope, recently introduced in Germany. This instrument, the first of its kind, makes it possible to bring into the field, at any desired moment, a standard object or substance for comparison with the one that is being studied. The microphotographs reproduced herewith give an idea of the way in which the device may render service to the investigator. They are from *Die Umschau*, accompanying an article by Dr. W. Thörner, from which the following has been translated for *The Scientific American Supplement* (New York, November 2). Says this paper:

"A 'comparison microscope' would be of the greatest value in many scientific investigations. Thus, for example, in the examination of foodstuffs for adulterations it would often be most helpful to be able to compare directly the sample under examination with an unquestionably pure sample of the alleged product. But in many other fields also, in mineralogy, botany, zoology and medicine—to quote only a few—it would be most useful to have at one's disposal a comparison microscope.

"Such an instrument, which by the way can be converted into an ordinary microscope by simply sliding a glass prism out of action, is shown in the accompanying illustration. The light-rays are twice turned through a right angle by a suitable arrangement of four total-reflection glass prisms, of which the central two are mounted upon a common sliding piece adapted to be moved into the optical field of the objective. The milled heads *AA* serve for the coarse adjustment, and the micrometer screw *B* for the fine focusing. Any difference in the thickness of the microscope slides carrying the two objects to be compared is compensated by setting the objective heads separately by means of the micrometer screw-threads *CC*. The small milled head *D* serves to make the lateral adjustment from right to left of the slide carrying the double prism. By this means the right- or left-hand object alone can, if desired, be viewed in the entire field, or, when the prism-slide is in its central position—as indicated by the snapping of a spring—the two objects appear simultaneously in the field of view, each filling one semicircular

area. The appearance thus presented is shown in our illustrations. The instrument is practically a double microscope, with which all observations made with an ordinary microscope can be made, but which offers the additional great advantage, that at any moment the object under examination can be brought into the field of view simultaneously with a standard object for comparison. An arrangement is also provided, by means of which one object can be viewed by ordinary, the other by polarized light. To do this all that is required is to insert a polarizer in one of the diaphragm openings of the microscope tables, and to place the analyzer over the single eyepiece. The new microscope is furnished with a joint and set-screw so as to allow it to be set at an inclination, and can, of course, be fitted with all the novel accessories attached to high-class microscopes.

"The accompanying reproductions of microphotographs obtained with the new microscope will give a good idea of the results obtainable with it. The first of these shows in the left half of the field a sample of Indian corn-meal, on the right rye-flour. The second sample shows two varieties of yeast. The third microphotograph illustrates two samples of diatom ooze; on the left a sample from Samoa, at a depth of 100 feet; on the right from Kuxhaven, at a depth of 33 feet."



SKY LIGHT NOT FROM STARS—Not all the light from the sky on a moonless night is direct or reflected starlight, according to Mr. Ynterna, of Gröningen, who has made some important investigations in this field. Says *Knowledge* (London, September):

"He finds that the sky light, even on the darkest night, is not wholly due to starlight, but arises in our own atmosphere, perhaps from a permanent aurora. In spite of this obstacle, useful observations of the total amount of starlight are being obtained. Professor Abbot has made some observations on the top of Mount Whitney (14,500 feet high), to diminish atmospheric illumination. The results are not yet to hand. . . . A large number of collaborators are engaged in work on . . . selected areas.

"While the full completion of the plan will be a work of many years, preliminary results of interest are already appearing. The whole scheme reflects great credit on Professor Kapteyn's energy and foresight, and illustrates the value of method in bringing about a rapid advance of our knowledge of the structure of the universe."



PLANTING A FRENCH MUSEUM

A NEW MUSEUM representing the artistic products of a foreign land is soon to be added to the Spanish institution already established among us. France, a sort of a foster-mother to us in all that pertains to the fine arts, is to have her official representative here in the form of a branch of the French Institute in the United States, founded and chartered in 1911. An art gallery is planned; lectures and exhibitions are to be held to familiarize us with the products mainly of contemporary French artists and artisans. But the news has not been received without objection, as seen on the next page. It is the ambition of the Institute, says Gustav Kobbé, in the *New York Herald*, "to deal with art in a live way, and to make it useful and popular to student and public." One of the schemes is to have a photographic replica of the French salons opened here the same day that the exhibitions open in Paris. The library will keep on file all French art publications, and will also be supplied with advance copies of important art sales catalogues so that the American collectors will have time to inspect them. Mr. Kobbé writes:

"The influence behind the movement for a French museum in this country, with a building in New York and branches in other cities, is a powerful one. Even the parent body, the Institut Français aux États Unis, with its list of officers, trustees, and members of council, fails to convey the possible scope of the scheme for a French museum in America and its influence in creating and conserving here a taste for French painting, sculpture, and the arts of decoration. Nor must the exhibition of prints illustrating the history of Paris and held last spring in one of the rooms of the American Fine Arts Building be regarded as anything more than a very small beginning made in order to take advantage of the presence here of a group of distinguished Frenchmen who had come over for the dedication of the Champ-plain monument.

"For behind this movement stands France—the French Government, unofficially, it is true, but represented none the less by some of its highest officials. In France the Government recognizes, cultivates, develops, and rewards art. Its interests engage the attention of one of the Ministers of the Government. The great École des Beaux Arts, with its Prix de Rome in all departments of art, and its branches are government institutions. It is true that official support is sometimes accorded to art that is too conventional, too academic, and too much of the 'recognized' and decorated order. But this very conservatism of government art has led to useful movements of protest and revolution. Such was the protest of the Barbizon men against the classicism of their day; such was that of the impressionists against later academic formulas. There always is a healthy art revolution or evolution going on in France.

"Thus France as a nation, as a Government, fosters art, nor does she regard her own borders as limitations upon her activities in this respect. It is this attitude of France toward artistic culture, this declination to rest content with the progress of art in her capital and her provinces, that gives to the movement for establishing a French museum in this country its great importance. Throughout the entire initiative one cardinal fact stands

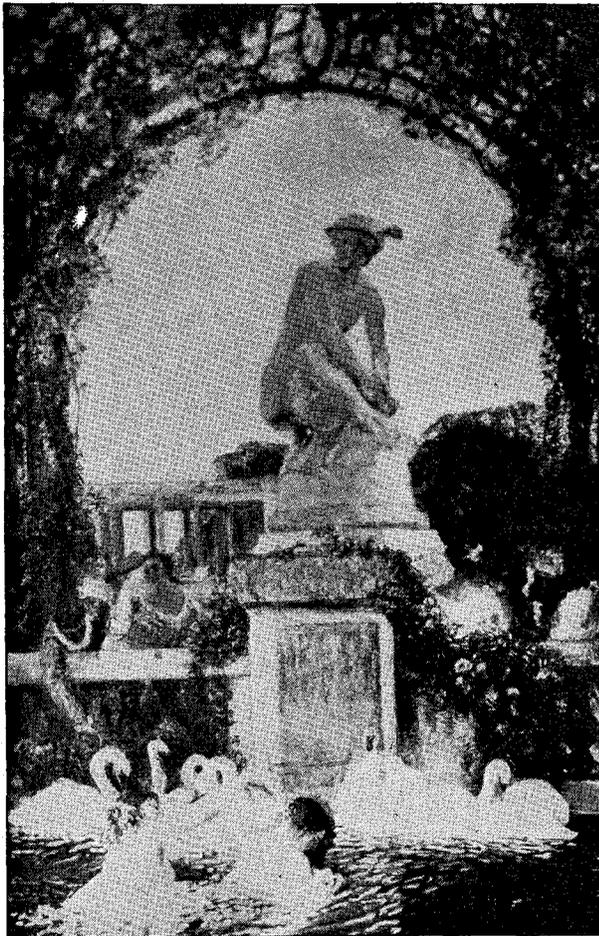
forth—behind the movement is France. The French Government, with its vast art resources to draw upon and place at the disposal through the loan of art objects, even the most precious, for exhibitions, is an active participant in this altruistic enterprise, and so amazing in extent are the art collections of the French Government that France can send loan exhibitions to the French museum and its branches here from the museum of the Louvre, the Gobelins, Sèvres, Cluny, Carnavalet, Versailles, and the museums in Lyons, Tours, Limoges, without any of these institutions suffering more than temporary inconveniences if, indeed, any."

American artists, architects, and others "who appreciate what they owe to France and look back with affection to the country in which they made their strides," says Mr. Kobbé, are active in this movement for a French museum in America. Such men as McDougall Hawkes, Otto H. Kahn, the banker, Lloyd Warren, the architect, Albert Herter, the painter, are among the men mentioned as forwarders of the movement. Mr. Hawkes, who is chairman of the organizing committee, says that the institute "might at first chiefly concern itself with popularizing in the United States knowledge of French art, pure and applied, of the past and of to-day." Mr. Hawkes

is further quoted from a prospectus in circulation for some months:

"Works of private initiative like the Hispano-American Society, concerned with Spanish art, or like the Cooper Union, concerned in part with art in general and fundamentally educational, contribute powerfully, together with our great museums in New York, Boston, Chicago, Washington, and Worcester, and the Carnegie Institute of Pittsburg, to the American's desire to surround himself with beautiful works of art.

"Under the impulse of young American architects, to whom you have so generously opened the gates of your incomparable École des Beaux Arts, the architecture of our cities and even of the country tends perceptibly to become influenced by French art. This tendency in architecture, public as well as private, gives birth in turn, especially in private interiors, to a taste for French decorative art, and this taste itself may be greatly augmented by data adapted to popular use. Necessarily this taste, if it becomes much more pronounced in the direction indicated, will become more and more dependent upon French art for its gratification; for we do not have in America the workmen necessary



"L'HEURE HEUREUSE" (THE HAPPY HOUR)

By Gaston La Touche.

This and the following pictures in this department are privately owned in this country, and are among those to be exhibited soon by the newly organized French Museum.