teen men who devote their entire time to teaching and research. Knowing that the state would not require a large number of veterinary graduates in any one year, the college was planned, as you can see from your inspection, to teach from fifty to seventy-five students in each class. This is all the veterinarians that the live stock interests of the state will require for many years.

The general tendency toward increased efficiency has been exemplified in this college by the adoption of certain procedures to extend its usefulness. An optional four-year course has been offered and several students are taking it. This was done to make it possible for those who desire to devote more time to their preparation for professional work. We hope in the near future to make the four-year course compulsory. There is a difference of opinion on this point. It is thought by some that it would be better to have one year of university work required for entrance than to have a four-year professional course with the present lower entrance requirements.

A combined course with the college of agriculture has been arranged so that students may receive both degrees in six years. A few students are already taking this course.

The ambulatory clinic was established to enable senior students to visit with an instructor sick animals in the near vicinity of the college. This gives a touch of actual practise in connection with class-room and laboratory work.

In 1908 there was established an annual conference for veterinarians. The faculty appreciated its opportunity to assist the practitioners of the state by introducing a short course of instruction on the most important veterinary subjects of the day. Every licensed veterinarian of the state is invited. Last year fully 15 per cent. of the active practitioners of the state attended this conference.

In June of this year a course in practical horseshoeing for the horseshoers of the state was authorized. This is under the immediate supervision of an experienced horseshoer who was trained in the leading schools of Europe.

The research work that is being done at the veterinary experiment station as well as in the laboratories is not only of great value to the live stock owners of the state and of much teaching significance, but it also brings the students in contact with the actual problems with which the practitioner has to deal in the active warfare against disease. It is by these and other methods that the New York State Veterinary College at Cornell University is striving to be a positive factor in alleviating the suffering among domesticated animals and in saving to the owners the losses from disease.

VERANUS A. MOORE

STEREOSCOPIC EFFECTS IN PHOTOGRAPHY

THE exhibition of scientific photography which was recently held at Vienna in connection with the Austro-German Medical Congress contains, according to an article in the London *Times*, an exhibit which marks a great advance in the progress of photography. This is a series of photographs in which true plastic effect is obtained without the employment of a stereoscope or any other optical instrument. For the various objects depicted to stand out in their true relations to one another all that is required is that the picture should be looked at directly and not from one side or the other.

The method by which this result is obtained is, briefly, as follows: A double negative is made in the ordinary way by the use of a stereoscopic camera with twin lenses. Instead of the reconstruction by means of the stereoscope of the plastic image from the

pictures thus obtained the inventors, Herr Friedmann and Herr Reiffenstein, have devised another means of making each eye see only one, and that one its own particular image. This consists of the application of the fact that when placed against a white background the image on a positive transparency is visible and that when seen against a black background it becomes invisible, while should the image be bleached the contrary is the case. From the negatives which have been obtained in the ordinary way with the stereoscopic camera are made, therefore, from one, an ordinary transparent positive, and, from the other, a negative which is afterwards bleached. Let it be assumed that from the negative corresponding to the image seen with the right eye the ordinary positive is made and that the left eye's picture becomes the bleached negative. If these two transparencies were super-imposed one upon the other and laid upon a white background only the right-eye picture would be visible. On the other hand, if placed upon a black background only the left-eye picture would be seen. It is, however, necessary that both eyes should see their respective pictures simultaneously. For this a background is required which to the right eye appears white and to the left eye black. This is provided by a sheet of glass, the back surface of which is prepared in a special manner, while the front surface is ribbed convexly, whereby the rays of light falling upon this surface are broken in such a way as to make it appear black or white according as looked at from one side or the other. The problem is, therefore, solved. The two transparencies are placed one upon the other and then both upon this background. The right eye sees only its proper image and the left eye likewise. These combine automatically, as is the case when a stereoscope is used, and the result is a true plastic picture.

The inventors exhibit five or six specimens of such photographs to which they have given the name of "stereographs." Three of these appeared to the writer of this article to be almost faultless. One of them represented a lump of quartz in which even the shimmer on the surface was reproduced; another, a spray of orchids in a vase, and the third, the skeleton of a gorilla. In the other specimens the two images did not seem to combine easily. The inventors are making arrangements for the manufacture in cheap and handy form of "backgrounds" which they hope before long to have brought to such a state of perfection that the process will be generally employed. With such "backgrounds" the inventors state that pictures can be looked at like any other photograph. In the case of the stereographs now being exhibited the effect of the black-and-white background is, however, obtained by a different method, which necessitates their being viewed by transmitted light.

SCIENTIFIC NOTES AND NEWS

The sixty-fifth meeting of the American Association for the Advancement of Science opened at Atlanta on Monday, Dr. Edmund B. Wilson, of Columbia University, being introduced as president, and Professor Edward C. Pickering, of Harvard University, giving the address of the retiring president on "The Study of the Stars," printed in this issue of Science. Subsequent issues will contain other addresses and reports of the meetings at Atlanta and of the meetings held simultaneously at Philadelphia, Princeton, New York and New Haven.

M. Jean Perrin, professor of physical chemistry of the University of Paris, has been given the degree of doctor of science by Columbia University, to which he is this year visiting professor.

Sir Philip Watts, K.C.B., F.R.S., has received the Order of the Rising Sun (second class) from the Emperor of Japan.

Dr. Charles DeGarmo, since 1898 professor of the science and art of education at Cornell University, will retire at the close of the next summer session.

The Senate of the University of St. Andrews has invited Professor J. Arthur Thom-