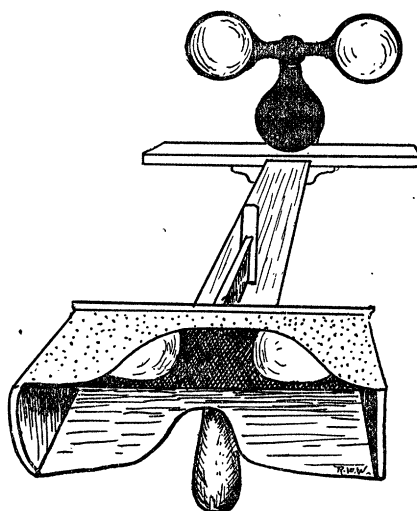
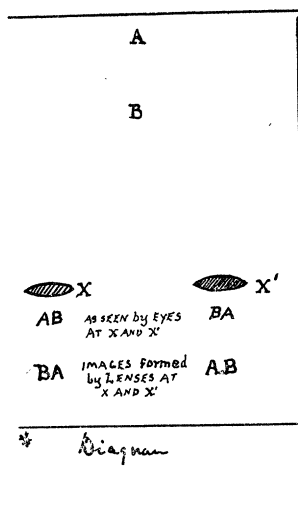


relatively restricted area, the menhirs, isolated standing stones, cromlechs, alignments, standing stones erected in circles, and squares or parallels. No corresponding monuments have been found in America.

I must conclude. My time and your patience are about exhausted. I recognize my shortcomings and apologize for them; but who can accomplish in one address the history of the first appearance of man on earth and, describing the discoveries of the century, reduce them to the limitations

means of a system of mirrors. I have recently devised a method of converting an ordinary stereoscope into a pseudoscope, which can be used to view near or distant objects, and which yields results far superior to the old form of instrument.

If two small lenses of equal focus (5 or 6 cms. is about right) are mounted side by side, they will form two inverted images in space lying in the same plane, of any object towards which they are directed. These images are not only inverted but have left and right interchanged, and when fused



A NEW PSEUDOSCOPE.
Figure -

and nomenclature of a new science? The difficulty is increased when we consider that the want of harmony on these subjects is as great among our own scientists as it is between them and their foreign brethren.

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A NEW FORM OF PSEUDOSCOPE.

IN the Wheatstone pseudoscope the left eye is made to see an object from the point of view of the right eye and *vice versa*, by

either by viewing them with the axes of the eyes parallel, or by means of a stereoscope will give rise to pseudoscopic vision, as will be readily understood by reference to the diagram.

Let *A* and *B* be two points in space, *B* being in front of *A*. An eye at *X* will see *B* to the right of *A*, and an eye at *X'* will see *B* to the left of *A*, and the fusion of these two images produces stereoscopic vision, *B* appearing nearer than *A*. Suppose now that *X* and *X'* represent the two

lenses. The images which they will form in space will be reversed, that is the lens *X* will give an image* in which *B* will be to the left of *A*, or just the opposite of the appearance presented when the eye is at *X*. It is apparent that the images *BA* and *AB* formed by the lenses are identical with what would be seen by eyes at *X* and *X'*, provided *A* were in front of *B*, consequently the fusion of these two images makes *A* appear nearer than *B*.

It is possible for one who has trained the eyes to view stereoscopic photographs without the aid of the stereoscope, to bring the two images together in the same manner, but most persons will require the assistance of the prisms. My instrument consists simply of a double magnifying glass (consisting of two lenses mounted in rubber frames) mounted on the picture holder of an ordinary stereoscope, as shown in the figure.

A neater device would be two small lenses cut square and mounted in a frame arranged to slide along the bar of the stereoscope, or better still the instrument could be given the opera-glass form.

The best objects to view with the instrument are small decorated bowls either right side up or bottom up, and such simple objects. They appear to the best advantage when viewed from above.

The image appears reduced in size but exceedingly brilliant and sharp and the pseudoscopic effect is sometimes perfectly startling.

If the experiment is tried in the manner which I have described with a double magnifying glass, it is important to see that the two lenses have the same focal length, which is often not the case.

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* I have drawn the images formed by the lens erect for the sake of simplicity. They are, of course, inverted in reality.

THE SUBDIVISION OF GENERA.

IN view of the almost universal acceptance of the doctrine of evolution by naturalists, most of the old discussions regarding the 'generic value of characters' read much like those about the nature of phlogiston. If we must admit that even species are largely conventions, holding good only so long as our observation of them is limited in respect to time, areas and conditions, the larger subdivisions—genera, orders, etc.—must necessarily and *a fortiori* be regarded in the same light, as groups comprising forms agreeing in a large number of important and striking characters, and which it is, therefore, convenient to regard from a common standpoint for the purposes of study; as forms probably derived from a common ancestor at a relatively not very remote time. If then admittedly genera are not established by nature but are man-made, it would seem desirable to adopt with reference to them the policy most conducive to a ready and comprehensive view of their relations to other groups of forms, and to facility of study. The latter consideration should weigh heavily, in view of the steadily increasing interest and instruction in natural science. It is certain that the study of the latter is greatly hindered by the multiplication of names, both generic and specific, and by the unnecessary substitution of terms of Greek and Latin derivation for well-understood English words of definite meaning.

On the other hand, the detailed study of any group by specialists necessarily results in the discovery of new common characters within certain closely-related groups of forms, by which they may be conveniently subdivided for comparative study. Of course, there can be no question of the importance of such study of the minute characters, which leads us more and more closely to the immediate effects of environment. The only question is how best to