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

make the results of such studies available to the general student, without at the same time compelling him to become a specialist himself (at least for the time being), at the cost of time and mental strain that can be more profitably otherwise employed. Excessive, and especially premature specialization, *pre*ceding instead of *suc*ceeding the establishment of a broad basis of general knowledge, is recognized as one of the most serious evils of our present system of scientific training and investigation. The specialist is becoming less and less capable of fruitfully correlating his results with the general facts and principles of the cognate branches of science, and the overweening self-esteem born of narrow training and ignorance of wider fields, is too often apparent both in writings and personal intercourse. At the same time, the coining of unnecessary new terms and names, more especially indulged in by this class of investigators, renders even their good work difficultly available to students outside of their specialties. Among the most aggravated and aggravating difficulties so imposed is the introduction of new generic names upon the basis of discrimina alleged to be cogently 'generic'; a tendency fostered by the ambition to have one's name forever associated with such new names.

Now if, as evolutionists must hold, genera, and orders as well, are essentially group arrangements made by man for the purpose of subsuming related forms under a general point of view for more ready and fruitful study, it would seem that the more comprehensive such points of view can be made, the better the main purpose will be subserved. So far from being closely *limited*, the definition of the genus should be as *wide* as possible; so that for the purposes of the general student, its members would be called by the most comprehensive name compatible with the objects of general study.* The specialist, on the other hand, may make use of the wider designation so far only as it may be useful for his discussion, while employing for the minor subdivisions required by his new points of view, such 'subgeneric' or 'sectional' designations as have heretofore stood for ill-defined genera.

It seems to the writer that the generalized point of view could thus be kept within convenient reach of the general student, while the subgeneric designations would afford the specialist ample facilities for discussion with his fellow-workers. Anyone desiring to specialize in a particular line would readily familiarize himself with the specialist's subgeneric or sectional terms. It would seem that in this way, the interests of both classes of students, as well as of science at large, would be effectually safeguarded and fostered, and the participation of a wider constituency in science study essentially facilitated.

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THE CARD INDEX OF EXPERIMENT STATION PUBLICATIONS.

In view of the recent discussions regarding card indexes of scientific literature many of the readers of Science may be in-

* A striking example of the opposite principle appears in Bulletin 18 of the Division of Agrostology, 'Synopsis of the genus *Sitanion*.' In the introduction, Scribner, in giving the characters upon which the genus is based as distinct from *Elymus*, remarks that they '*justify* the separation of these species as a distinct genus,' although "to be sure there are species so closely connecting *Elymus* with *Sitanion* that it is difficult to say to which genus they ought to be referred." These intermediate forms "indicate their close relationship, but this fact does not afford sufficient reason for *uniting* them. * * *"

Here it is evident that the view held is that genera should be as *closely limited* as possible; regardless of the fact that the obvious close resemblance of these plants will put every student, not a specialist, to the trouble of eliminating all the species of the well-known genus *Elymus* before considering the unfamiliar *Sitanion*; which as a subgenus of the former would have just the standing its slight structural differences seem to justify.