Platinum compounds such as (H3N)2 PtCl2 have been obtained in two forms, Werner admitting here the following plane configura­tions :—

Chromium shows a behaviour analogous to that of cobalt, and analogous space-formulae may be used here. But, in a general way, at present it is extremely difficult to decide upon their value.

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**STEREOSCOPE** (Gr. *στερεός*, solid, *σκοπειν*, to see).@@1 The funda­mental property of stereoscopic vision, or simultaneous vision with both eyes, is the direct perception of the relative distances of near objects. Of course, ideas of the different distances of objects also occur in vision with a single eye, but these are the result of other experiences and considerations. These representations are also not always unequivocal (see fig. 1). For instance they may arise from the former know­ledge of the shape and size of a distant object, from the partial covering of one object by another; and they very often occur where stereoscopic observation fails; this latter is involuntary, *i.e.* the observer is unconscious of it. We will now investigate the conditions necessary for the perception of depth.

If the head is held still only one portion of space can be observed stereoscopically. The single eye, when moved, sur­veys, including indirect vision, a field which measures 180° in a horizontal direction, and 135° in a vertical direction. The two fields overlap and a smaller conical space is formed, with the nose as vertex (B V S in fig. 2), in which both eyes can see simultaneously; and outside this space stereoscopic vision is impossible. The shape and size of this space are very differ­ent in men and animals. According to Armin Tschermak the horizontal extent of the space surveyed with both eyes is only 34° in a rabbit as compared with 90° in man, 15°in a fowl and about 5° in a carp (measured in water). There is a further difference between the eyes of men and animals. The optic axis of the eye is the line joining the centres of the curves, but the direction in which the eye can see most clearly does not always coincide with this, being determined by the spot on the retina which is most susceptible to light, the so-called yellow spot *(Fovea,* F in fig. 2). In man this spot is still near the axis, although not always exactly on it. It is not perfectly known how it is situated in animals, but in many the axes of the eyes diverge (especially strongly in geese), and the portions of the retina utilized in stereoscopic vision lie far distant from the axis, as in many animals the eyes are only slightly movable.

Every time that the eyes are directed on one spot (P in

fig. 2) this point is seen simply, together with a number of other points which together form the so-called “ horopter.” According to Joh. Müller, Helmholtz, Hering, Volkmann and others, these arc those points of the object-space *(e.g.* Q and R in fig. 2), whose images fall on *identical* or corresponding spots on the retina, by which are meant those points on the retina whose *nerve filaments* are united and which are equidistant in the same direction from the centre of the yellow spot (see Eye; Vision). The horopter varies according to the position of the fixed spot in the object-space; for example, it is the ground itself for a man standing erect and looking straight ahead. All object-points situated outside the horopter fall on points of the retina which arc not identical, but the two images are only seen as real double images in exceptional cases. As a rule the effect is that these points are also seen simply, but at other dis­tances than that of the fixed point P. The differences of the images arise in the moving of the image-points in the direction of the connecting line of the two eyes. For this reason the eyes cannot recognize the space between parallel shining telegraph wires if the connecting line of the two eyes be parallel to the wires, whilst the perception of the depth occurs involuntarily if the connecting line of the eyes is more or less perpendicular to the wires. These differences of images which have been men­tioned are therefore necessary and are sufficient for the perception of depth. The explanation that the perception of depth was due to a difference between the two retinal images was first given by Ch. Wheatstone in 1833; but it was contradicted by

E. Brücke (1841), Sir David Brewster (1843) and others, who stated that when observing an object the angle of convergence of the axes of the eyes continually changed, and through this and also by the exertion of the muscles and the accommodation of the eye there was a simultaneous touching of the object, which gave rise to the perception of its depth. This latter theory, however, was contradicted by H. W. Dove, who showed that a stereoscopic viewing was also possible with momentary ! illumination of the object; and still less does it agree with the

@@@1 The subject of stereoscopy has been extensively developed by the author of this article, who, curiously enough, having lost the sight of one eye through an accident, could no more enjoy the beauties of stereoscopic sight.—Ed.