

DR. C. VIGUIER ON "SENSE OF DIRECTION".

AN important article "On the Sense of Orientation and its Organs in Man and Animals," in the July number of the *Revue Philosophique* (pp. 1-36),¹ by Dr. C. Viguier, writing from Algiers, advances a subject which was previously noticed in *MIND*, on occasion of M. Cyon's thesis on the functions of the Semicircular Canals (XII. 559) and otherwise. Dr. Viguier gives first a remarkably careful review of the different suppositions that have been put forward to account for the well-attested feats of dogs and other animals, also of human beings chiefly savage, in finding their way back to particular spots; and then expounds his own view (formed independently but anticipated in general terms by one or two anonymous writers) that the only adequate explanation is to be found in the hypothesis of a special mode of unconscious sensation excited by the earth's magnetic currents. In particular he seeks to show (against the general objections urged by Darwin and another writer in *Nature*) how such a mode of sensibility might supply all the data necessary for determining direction. Still further he aims at giving scientific definiteness to the hypothesis by contending that in the semicircular canals, as investigated after others by Cyon and later by Spamer (*Pflüger's Archiv*, 1880, p. 585), the precise kind of specialised organ that ought to be assignable in the case is supplied. No attempt is here made to give the steps of his argument towards this conclusion, but it is one deserving of all attention. The article closes with an indication of the kind of experiments which, in Dr. Viguier's view, might be carried out upon pigeons (though these are not remarkable for special "sense of direction") and other animals, for verification or rejection of the hypothesis. He has been forced to publish his research in the tentative form, from want of means to carry out the experiments by himself. Among his other suggestions, he calls for experiments on deaf-mutes; apparently not knowing that Prof. Wm. James (as noted in *MIND* XXIII., 412) is already at work on this line.

EDITOR.

¹ The article has since been printed also separately (Paris, Germer Baillière).