27. If a homogeneous fluid mass is rotating about an axis with a sufficiently small angular velocity there are two possible oblate spheroid figures of equilibrium, one nearly spherical, Σ_1, and one much flattened at the poles, Σ_2. If the fluid mass is compressible there are two figures of equilibrium nearly oblate spheroids. One approximates Σ_1 and is depressed in middle latitudes below the spheroid having the same polar and equatorial radii. The other approximates Σ_2 and is elevated in middle latitudes. The former theorem was proved by Airy, Callandreau and Darwin; the latter is a new theorem. This is established and a formula for the deviation from a true spheroid is obtained by Professor Moulton. He starts from an assumed relation between the pressure and density in the fluid and by making a compressibility parameter play a fundamental rôle is able to discuss the more flattened figure.

28. In his third paper Professor Carmichael shows how rational solutions of certain functional equations may be employed in solving problems of a certain class in the theory of diophantine analysis. In particular, several problems of Diophantus and Fermat are readily treated. The contents of both this paper and the preceding one by the same author will appear in his forthcoming "Introduction to Diophantine Analysis," to be published by Wiley and Sons.

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A GEOMETRIC DERIVATION OF A GENERAL FORMULA FOR THE SOUTHERLY DEVIATION OF FREELY FALLING BODIES.*

BY PROFESSOR WM. H. ROEVER.

(Read before the American Mathematical Society, October 25, 1913.)

WITHIN the last dozen years interest in the problem of the deviations of freely falling bodies seems to have been revived. There is a substantial agreement, among the writers who have treated this subject, as to the magnitude of the easterly deviation, their result being practically the same as that obtained

* See BULLETIN, vol. 20, No. 4, p. 175.