taken by the departments concerned, but we feel that unless some special attention is bestowed by the Council itself no satisfactory progress will be made.

The third meeting of the Animal Husbandry Wing of the Board of Agriculture was held in the year and a large variety of subjects was considered and schemes reviewed. The importance of mixed farming as an aid to fodder production was stressed and the grant of special funds from the Council to the provinces for this work was recommended. Cattle diseases like pleuro-pneumonia of goats, Johnes disease in dairy cattle, surra in horses, theileriasis of cattle, rinderpest of cattle, in goats and sheep, and Doyles disease of poultry were considered and further work on nearly all of them recommended. As a preliminary to pedigree registration the breed characteristics of seven important breeds were defined and the information was published in the year. In respect of sheep and wool, an animal nutrition scheme for Assam, investigation of poultry diseases, development of the fishing industry and apiculture and pig keeping, considerable preparatory work by the Council in the year is reported. We note that the proposal to open a Central Veterinary College for India has now been dropped. The Report contains a review of the operations of the Agricultural Marketing Officers and the Central Marketing Staff.

In addition to the three journals being published by the Council quite a large number of monographs, reports and bulletins were issued during the year. A description of crop plant characters in respect of rice and cotton, the voluminous reports on the cost of production of sugarcane and cotton, and a report on the prospects of cinchona cultivation in India may be mentioned among the large number of publications in the year. Among other activities may be mentioned an enquiry into the agricultural and veterinary needs of Coorg with a view to developing the resources of this small but important tract. The Report bears ample evidence that the Council is performing a most important function somewhat on the lines of the Federal Department of Agriculture in the U.S.A. Though fundamental problems and those of all-India application alone may be deemed to come within the sphere of the Council's activities, we cannot help thinking that the extent to which the work leads to practical results and to general adoption should be watched and suitably provided for. A. K. Y.

THE DEVELOPMENT OF GALACTIC DYNAMICS AND SOME ALLIED PROBLEMS*

THE Address deals with the dynamics of rotating configurations, and its astronomical applications. It also deals with the theories regarding the origin of the solar system.

The earliest work on the Maclaurin spheroids and pear-shaped configurations of liquid masses is first mentioned. This leads on naturally to the work of Jeans on rotating compressible masses. Of a fundamentally different nature is the work of Milne, Chandrasekhar and others on the distortion of polytropic configurations of a rotating mass in relative equilibrium. The Address deals exhaustively with the work of Chandrasekhar, Von Zeipel and Kopal in this field. Recent work, stimulated by the author of the Address himself, has generalised the results to the case where the variation of angular velocity, in specifying the polytropic configurations of a rotating gaseous model, is taken into consideration.

One of the most important applications of the theory of rotating gaseous configurations is to the explanation of the spiral arms of spiral nebulæ. Of several such theories the oldest is that of Jeans, but this theory meets with a number of objections. Later theories are due to Brown, Vogt and Lambrecht, Wellman, Jehle and the most comprehensive work is that of Lindblad. Recent investigations by Banerji, Nizamuddin and Bhatnagar appear to give reasonable conditions for the formation of spiral arms.

The last part of the Address is devoted to modern theories of the origin of the solar system. After a brief mention of the planetesimal theory of Chamberlain and Moulton, and the tidal theory of Jeans as modified by Jeffreys, the Address deals comprehensively with the binary star theory suggested by Russell. The theory of Lyttleton and objections to it by Luyten and Hill, and further modifications by Lyttleton are explained in detail. A recent suggestion of Banerji of looking at the problem as a problem of three bodies in its general aspects has enabled Bhatnagar to come to the conclusion that the result of collision would be that the components of the original binary would themselves collide. This provides another objection to Lyttleton's theory of a nature different from that pointed out by Luyten.

B. S. M.

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* Summary of Presidential Address.—By Prof. A. C. Banerji—Mathematics Section, Indian Science Congress, Madras, 1940.