

conformity with the previous workers^{1,2}. Gliosis in brain of aborted fetuses was an additional feature necessitating further studies.

In parallel with histo-anatomical studies isolation of the chlamydial agents in the yolk sac of embryonating chicken eggs confirmed the disease as chlamydiosis.

Complement fixing antibodies in 21 days post-abortion sheep sera were demonstrated with standard chlamydial group antigen and antigen prepared presently.

The immunofluorescence studies with the group specific conjugated globulin confirmed these organisms in the sections of cotyledon and yolk sac membrane as Chlamydia.

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Occurrence of Spontaneous Haploid in *Ricinus communis* L. var. Aruna

Haploid has been reported in castor—*Ricinus communis* L.— by Poole and Hadley⁴ from selfed seed of P.I. 183468. There are reports of haploids in other crop plants reviewed by Kimbar and Riley² and Magoon and Khanna³. Since 1954 there has been no report about haploid in castor and the work developed from such a plant in developing homozygous diploid line. Present paper deals with the haploid obtained in *Ricinus communis* variety Aruna.

In Aruna at Regional Research Station, Raichur, India, an interesting plant was observed. This plant was dwarf with a few rough and narrow leaves and

produced spike under field conditions which did not set any seed. The plant was dug out and potted in the bigger pot. Transplanting had enormous effect on the plant by way of producing plenty of foliage and production of spikes in addition to the primary ones. Cytology of the plant revealed in root tip preparations following oxyquinoline technique that it possessed ten somatic chromosomes as compared to the twenty that are seen in the normal plants. Flower buds were used for meiotic study which also showed ten univalents. Spikes produced from the haploid plant possessed shrivelled seeds. In order to develop homozygous diploid from the haploid, the secondary branches have been treated with various concentrations of aqueous colchicine (0.1 to 0.5%) to develop inbred lines for use in commercial hybrid seed production. However the attempt was not successful in obtaining homozygous diploids. Studies in castor show that the utilisation of heterosis seems to have limited scope in hybrids of the varieties HC 6, Gujarath Monospike, Cimmarron Inbred, Aruna, Rosy and TMV 11. However the development of homozygous diploid lines as is envisaged might help in developing commercial hybrids. The said haploid is surviving showing perennial habit. Attempt of diploidizing has been continued.

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