Studies on physical properties, *viz.*, thermal inactivation point (TIP), dilution end point (DEP) and *longevity in vitro* (LIV) carried out as per procedures outlined by Bos *et al.*[2], using infected chickpea tissue as a source of virus inoculum and Prince bean plants as an assay host, indicated that the virus had TIP between 70–75° C. DEP : 10^{-5}–10^{-6} and LIV : 96–120 hrs. at 27–30° C. Serological test was performed with CpDMV sap for establishing relationship, if any, by tube ring interface precipitin method (Ball[1]). The antisera of alfalfa mosaic (AMV), bean yellow mosaic (BYMV) and cucumber mosaic (CMV), viruses did not react with CpDMV antigen which indicated that the CpDMV is not serologically related to AMV, BYMV and CMV.

For host range studies, plant species belonging to *Aizoaceae*, *Chenopodiaceae*, *Cucurbitaceae*, *Labiatae*, *Leguminosae* and *Solanaceae* were inoculated with infective virus sap by leaf rub method. Of the 46 host plants tested, the virus infected 17 hosts, mostly belonging to the Leguminosae. The hosts reacting with local symptoms included : *Tetragonia expansa*, ridge-gourd, *Dolichos biflorus*, Pinto bean, *Vicia faba minor*, cowpea (Early Ramshorn, CG–11) and garden peas (BK–2, L–116). Hosts reacting with local and systemic symptoms included : limabean (Sussex Wonder), French bean (Big-ben, Bountiful, Burfee Stringless, Master Piece, Prince, Processor and Top Crop), garden peas (Bonneville), broad bean (Jackson Wonder) and *Vigna cylindrica* (Jalgaon Local). Hosts reacting only with systemic symptoms included swordbean, chickpea, limabean (local), Processor bean and pigeon-pea (BDN–1, C–11, EB–3, HY–1, No. 48) and cowpea (K–39, HG–22, Co. Pusa–3, Sel–1473). Hosts reacting with local symptoms but with latent systemic infections included : *D. lablab* (Hebbal–3), garden peas (Khaperkheda) and cowpea (Blackeye). Symptomless carrier virus hosts included : garden peas (Alderman Dwarf, Alaska, No. 6115, 8587–1, 8588–1), lucerne (Sira–9), *Trifolium repens* and mungbean (11/395). Immune hosts included : *Chenopodium album*, *C. amaranticolor C. quinoa*, *Celosia prgentea*, zinnia, cucumber (Delicates), *Ocimum basilicum*, peanut (JL–24), *Cassia tora*, sunnhemp, *Lathyrus sativus*, lentil, scarlet-bean, French-bean (Green Refuge), garden peas (P–388–1, SL–420, Sugarpea), *T. alexandrium*, *T. incarnatum*, fenugreek, mungbean (10/303, K–851), urdbean (4–5–?, UG–117, Sindhkheda 1–1), *Datura fastuosa*, *D. stramonium*, tomato (Marglobe), *Nicotiana glutinosa*, *N. megalosiphum*, *N. sylvestris*, *N. tabacum* (Samsun, White Burley, Xanthi), garden petunia and *Solanum nigrum*.

Perusal of literature indicates that AMV, BYMV and CMV infections have been reported to cause chickpea leaf distortion or reduction of mosaic diseases (Dhingra *et al.*[4], Kaiser and Danesh[5] Nene *et al.*[7]). The CpDMV virus differs from AMV, BYMV and CMV infections of chickpea for the lack of serological relationship and host range similarity. The CpDMV also differs from other sap transmisible viruses, *viz.*, common pea mosaic (Murthy and Pierce[6], Sreenivasan and Nariani[9]), pea enation mosaic (Erwin and Snyder[3]), western bean mosaic (Skotland and Burke[8]) of chickpea in symtomatology on chickpea, host range and physical properties. Therefore, chickpea, distortion mosaic virus (CpDMV : */* : */* : */* : S/Ap.) may be a new virus hitherto unrecorded on chickpea.

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A NEW BIOTYPE OF *COLLETOTRICHUM FALCATUM* W.

SUGARCANE red rot (*C. falcatum* W.) is a devastating disease. It is attributed to the appearance of light type strains of the pathogen[1,4,5] and more virulent intermediate type strains[2]. Hence screening of cane varieties against red rot biotypes before releasing for cultivation is essential[1,2]. Apart from this, collection of new biotypes is also essential for red rot resistance tests.

Appearance of a new intermediate biotype (R. 183) has been picked up from B.O. 47 in Central U.P. during 1973–74. R. 183 differs from light coloured R. 117 and the intermediate type R. 135 in that it has radiating, fluffy textured mycelia on oat meal producing irregularly scattered conidia on periphery of radiating margin.

TABLE I

Comparative cultural characters of new biotype R. 183

Sl. No.	Biotype	Colour: Colony	Colour: Spore mass	Spore size
1.	R. 117	Moon beam	Grenadine-R	26·1–31·5 μ × 4·2–5·8 μ
2.	R. 135	Piping rock grey stone	Tigerlily	19·0–26·6 μ × 4·2–5·8 μ
3.	R. 183	Piping rock grey stone	Cadmium orange	33·0–37·4 μ × 4·4–4·95 μ

The virulence of R. 183 was also compared with R. 117 and R. 135 on a set of ten host varieities by the usual plug technique. The comparative behaviour is given in Table II.

TABLE II

Comparative behaviour of R. 183 *by plug technique*

Sl. No.	Variety	Average lesion length in cm against biotypes: R. 117	R. 135	R. 183
1.	Co. 213	42·8	60·8	75·6
2.	Co. 312	110·2	109·8	122·7
3.	Co. 331	56·7	70·4	78·1
4.	Co. 453	73·7	97·5	82·3
5.	Co. 1148	34·9	34·5	39·1
6.	Co. 1158	43·4	54·1	41·7
7.	Co. S. 443	75·6	43·4	62·1
8.	Co. S. 510	118·7	81·8	122·1
9.	B.O. 17	61·4	49·7	40·1
10.	B.O. 47	37·4	43·6	97·7

R—Resistant (lesion length up to 37·5 cm).

MR—Moderately resistant (lesion length between 37·6 and 75·0 cm).

S—Susceptible (lesion length above 75·0 cm).

A perusal of Tables I and II indicates that R. 183 is morphologically different from the other biotypes, as the moderately resistant varieties, *i.e.*, Co. 213, 331 and B.O.47 became susceptible with R. 183 and this has been found responsible for the decline of B.O. 47 in the area. It is, therefore, essential that in the resistance tests only the virulent biotypes be picked up.

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ENDOSPERM IN *ARIOPSIS PELTATA* NIMMO., ARACEAE

VERY few studies have been undertaken on the full gamut of endosperm development in the family Araceae. In their review on the topic, Swamy and Parameswaran[1] have raised doubts on the occurrence of the Helobial ontogeny in the family. This family is reported to exhibit all the three major types of endosperm ontogenesis—Nuclear, Cellular and Helobial. Swamy and Parameswaran[1] suggested not only a fresh study of the taxa already investigated but also an extended investigation on taxa unworked hitherto.

In the course of comprehensive studies on the embryology of the Araceae, the monotypic genus *Ariopsis peltata* was seen to exhibit a clear instance of helobial ontogeny, which is the first unmistakable record.

The ovules are orthotropous bitegmic and tenuinucellate (Fig. 1). The fertilized embryo sac is broader at the micropylar part and it is in contact with the inner integument except at the micropylar end where a nucellar cap persists. The primary endosperm nucleus prior to division is located at the chalazal end of the embryo sac. It divides *in situ* in a transverse plane (Fig. 2) causing the partitioning of the embryo sac into a conspicuously large micropylar chamber and a small chalazal chamber. The early post-fertilization development is characterized by rapid elongation of the ovule along the micropylar-chalazal axis and the position occupied by the smaller chalazal chamber is not affected. The cytoplasm of