types in early generations of selfing (East[2], Allard[1], and East and Hayes[3]). The abnormal plant types observed in the progeny of selfed plants, which might also have been due to the inbreeding effect, were counted as mutants, and this might have contributed to the higher frequency of mutants noticed, in the progeny of selfed plants. Most of the mutants noticed in the progeny of selfed plants were of undesirable nature. Thus, the progeny of selfed plants appeared to be unadapted from the point of view of fitness.

There are some indications from the study that, for the direct utilisation of mutants in agricultural system (mutation breedling proper), the open pollination in M_1 generation of the cross pollinated crops may prove to be more useful.

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DOTHIORELLA ROT OF *CITRUS SINENSIS* FRUITS FROM INDIA

DURING a survey of the local fruit market in October–November, 1976, a serious soft rot disease was noticed on *Citrus sinensis* (L) Osback (vern. *Mausambi*) fruits. While young spots were circular, water soaked and brown, mature ones showed symptoms of rotting with greyish white to brown fungal growth. The pathogen was isolated by usual methods in pure culture and identified as *Dothiorella limonis* McAlpine.

D. limonis on Citrus sinensis was found to be a wound parasite. Besides, the fungus also infected *Citrus decumana* (vern. *Chakotra*).

The present note is the first record of the fungus from India. A sub-culture of the pathogen has been deposited in C.M.I., Kew, England, under the accession number IMI 213308.

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THE MANGO COCCID, *RASTROCOCCUS ICERYOIDES* GREEN (HOMOPTERA: COCCIDAE) AND ITS NATURAL ENEMIES

THE mango coccid, *Rastrococcus* (*Phenacoccus*) *iceryoides* Green was recorded for the first time by Green (1908) on *Mangifera indica*, *Bosuellia* sp. and *Capparis horrida* from India. Later on it was reported on *Ordina wodier* Roxb., *Hibiscus rosasinensis* and Cacao (Ayyar, 1919; Rawat and Jakhmola, 1970; Abraham and Padmanabam, 1967). During survey studies on insect pests of mango and their natural enemies from 1974–75, the authors found *R. iceryoides* causing serious damage to mango trees in Malihabad area of Lucknow district in U.P. The infestation was at peak during September–October. The first and second instar nymphs feed on ventral surface of the leaves and transfer to young shoots and inflorescence later on. Severely infestel leaves first turn yellow, gradually dry and ultimately defoliate. The female coccids are apterous, yellowish cream in colour with waxy white covering and lateral processes. Average body length is about 3·6 mm and width 2·5 mm. Adult females die in situ after laying shining white, oval eggs in woolly sacs. On an average more than 350 eggs are laid by an individual female. The coccids over winter in egg stage.

Heavily infested shoots by the coccid were brought to the laboratory and kept for study in the glass jars with a view to collect their eggs for maintaining culture in the laboratory for further studies. After 3–4 days, four species of nymphal parasites, viz., *Anagyrus pseudococci* Girault, *Gyranusoidea* sp., *Paraleurocerus viridis* Agarwal (Encyrtidae) and *Promuscidia unfasciativentris* Girault (Pteromalidae) emerged from the culture. Parasitization by these species was as high as 42 per cent and major parasites were *Anagyrus pseudococci* and *Promuscidia unfasciaventris*. However, exact parasitization by individual parasite could not be known. *Tetrastichus* sp. and *Prochiloneurus insolitus* (Alam) have been reported on *R. iceryoides* (Rawat and Lakhmola, 1972; Shafee *et al.*, 1975), but there is no mention about these species.

Apart from these hymenopterous parasites small red ants, *Monomorium floricola* (Jerden) were also found predating on 1st instar nymphs of *R. iceryoides* maintained in laboratory culture on pumpkins.

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"SOFT-WOOD GRAFTING"—A NEW TECHNIQUE FOR HARD WOOD PLANTS

STONE-grafting also known as bench grafting of mango gives nearly hundred per cent success when it is placed in pot and reared in nursery conditions by providing protection against rain and heat[3,4,5]. However stone grafting of mango *in-situ* under field condition and also stone-grafted plants when placed immediately in the ground for rearing gave a success of 12·3% only in the trials conducted at the various research stations of Gujarat during 1973.

Soft-wood grafting of mango on, *in-situ* grown (one year or more old) mango stocks tried during the 1972 and 1973 at the Anand Campus of Gujarat Agricultural University gave nearly 100% success. In this technique, all the leaves on the stock plants were removed immediately after grafting[1]. Though the grafting method gave a very high perentage of success, the survival through summer, nine months later, was rather poor. The technique was therefore modified during 1974 and 1975 and as a result it is now possible to graft and establish the plant with 100% success by Soft-wood technique *in-situ* wherein all the leaves on stock plants are retained[2].

The modified technique consists of raising a root stock *in-situ* for one year or more and grafting by wedge method at the site of linearly developing terminal new growth of stock, having bronze coloured leaves and stem. The Scion wood to be used should be defoliated 10 days prior to the grafting and having the same thickness as that of terminal shoot. The graft should be secured firmly using 1·5 cm wide and 45 cm long, 200 gauge polythene strip.

Having obtained 100% success by *in-situ* soft-wood grafting technique in mango, the technique was tried under feeler trial on a few root stocks of some of the fruit plants of one year old and also on large grown-up trees for top working during 1975 and 1976 at the Anand Campus as well as on cultivators' field. The results obtained are given below.

Sr. No.	Name of fruit plant	Number of grafts prepared	Number of successful grafts	Percentage of success
1.	Aonla (*Phyllanthus emblica* Linn.)	90	66	73·3
2.	*Cashewnut (*Anacardium occidental*)	7	5	71·4
3.	Guava (*Psidium guajava* L.)	294	207	70·7
4.	*Jack fruit (*Artocarpus heterophyllus*)	6	2	33·3
5.	Phalsa (*Grewia asiatica*)	67	67	100·0
6.	Sapota (*Achras sapota* L.) on Rayan or Khirnee (*Manikhera hexandra*) root-stock	72	66	91·6

* Only limited number could be prepared as these are rare fruit plants of the tract.

It has also been demonstrated at the campus and in the fields of cultivators that grown up trees of mango, aonla, rayan, etc., can most easily be converted into any choice variety by periodically dehorning the main limbs of the tree, allowing new soft-shoots to produce and hence grafting these shoots by soft-wood grafting technique.