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### FIFTH DYNAMIC RESEARCH

#### MUTATION RESEARCH

One of the major developments during the past month has been the proposed establishment of an X-ray unit at Saint Hill Manor for carrying out plant mutation tests.

Dr. Hubbard is negotiating with Allied Electrical Industries Ltd. for such a unit, and it is expected to be in operation on the premises by mid-summer.

He also understands the installation of soft radiation X-ray equipment at Saint Hill will be the first of its kind in the country.

Apart from using the apparatus for his own research work Dr. Hubbard plans to invite British experimenters to send their seeds to him for bombardment under X-rays. The X-rayed seeds can produce improved, or new varieties, of plants - "and there is positively no community danger," he stressed.

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#### SEED GERMINATION

For several months British gardeners have been arguing amongst themselves about the pros and cons of seed germination. The majority however, seem united in the belief that in Britain seed germination is inclined to be poor. One or two parts of the Island being exceptions to the rule.

At one time Dr. Hubbard found himself involved in the seed germination 'battle'; when he discovered that sterilised soil produced a far higher germination rate than ordinary soil. This indicated that bacteria was the cause of all the trouble.

Now he has found a new seed sowing technique that appears to have provided a solution.

"Farming Express" carried a full report, along with the well known British national gardening newspaper "Garden News". They both acclaimed the idea.

Briefly the sowing technique experiment was this: "Four separate beds were used. In two of these considerable time and labour was spent in preparation and treatment of the soil; nutrients were added and leaf mould mixed in, the seeds were sown and a layer of soil spread over the surface.

In the second two beds a different method was used. This is described by Dr. Hubbard as the "lazybones" way. No treatment was necessary. The surface soil was simply covered in seed and a quarter inch layer of leaf mould spread over the top. No top dressing of soil was added.

In the latter case the seeds popped through within a matter of days, producing good, strong, healthy seedlings. But in the conventional beds the fibrous compost beneath the soil drained the water from the top soil leaving a solid crust of dried mud.

The seeds beneath were choked to death by the decaying leaf mould - and germination was almost negligible.

So there is the answer, and the moral....less work, reduced expense gets better results! Try it the "lazybones" way the next time you sow some seed.

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### PLASTIC GREENHOUSES

The gardening staff at Saint Hill has another addition to the 'family' - the latter being their family of greenhouses. The latest can hardly be described as the "baby" by proportion, but it certainly cost less than the other two to construct, and it is expected to be many times more efficient.

The new greenhouse is an experimental structure, and consists primarily of a scrap timber frame and plastic covering. In the May Bulletin on horticulture I briefly introduced you to the use of pvc (Poly Vinyl Chloride), the plastic material that Dr. Hubbard was using to cover the new greenhouse. At that time there was still a considerable amount of work to carry out. But now the greenhouse is in use.

It is a magnificent affair, measuring a total of twenty-five feet by fifteen feet in width. The interior has been designed into two separate compartments, with three open/shut windows in each compartment. The roof is nine feet high at one end, sloping to six feet six inches for rain drainage - this gradient also acts as a sun-trap.

Another novel feature of this greenhouse is the ventilation through two air chimneys. These have been constructed two thirds up on the side of the highest wall - as the hot air is released so cooler air is drawn down in from below at the window openings.

By this method expensive electrical equipment is dispensed with, but the air displacement system produces identical efficiency with that of the artificial ventilation. When it is necessary to build up the temperature inside the greenhouse the windows are shut and a flap is simply pulled down inside the chimney to seal off the air flow.

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