by cell fusion, possibly by fatty degeneration of cell membrane. MONTGOMERY et al.[9] have observed multinucleated giant cells which had been formed by the fusion of plasma membranes after X-ray irradiation in Chang liver cell culture. The suggestion that the multinucleated giant cells are formed when macrophages swallow young spermatids[3] needs critical study. Giant cell formation is an irreversible phenomenon and these cells ultimately undergo degeneration or liquefaction necrosis (Figure 3).

Giant cell formation in the ovary is a rare phenomenon. MANDL[10] reports the occurrence of giant cells in the mouse ovary exposed to very high doses (over 1000 R) of X-ray irradiation. Here, the giant cells are characterized by the large oocytic cytoplasmic bodies surrounded by a single layer of cuboidal granulosa cells. Several such giant cells have been noticed in the ovary of the gerbils (Figure 4) subjected to internal P^{32} irradiation (3 μc/g body weight). As regards their formation, 2 possibilities may be considered: (a) following irradiation, the oocyte of small follicles, having a single layer of cuboidal cells, may show accelerated growth of cytoplasm unaccompanied by increase in the layer of surrounding granulosa cells; (b) the oocyte may continue to grow normally, but the multiplication of granulosa cells and layers may not take place and, in this case, the giant cell represents a medium-sized follicle. This is quite possible since the granulosa cells of growing follicles are highly vulnerable to P^{32} irradiation as they incorporate a good amount of this isotope. Like giant cells in the testis, these ovarian giant cells ultimately undergo degeneration[11].

Zusammenfassung. Die vielkernigen Riesenzellen sind bei der Wüstenmaus *Meriones hurrianae* Jerdon in den Samenepithelzellen nach Injektion von Ca^{45}, Co^{60} und P^{32} nachgewiesen worden. Sie wurden bei der Verschmelzung der Spermatozyten und Spermatiden gebildet. Die Riesenzellen sind im Eiersack nach Einführung von P^{32} beobachtet worden. Der Eiersack bestand aus vielen grossen Oocyten, die von einer einzigen Lage Glomerulosazellen umgeben sind.

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Calcium-Sodium Interaction in the Pod Development of the Peanut, *Arachis hypogaea* L.

In the peanut, calcium is known to stimulate pod formation and contribute directly to the formation of the fruit coat. It is to be supplied to the region of pod development and is absorbed directly by the pegs and developing fruits[1]. On the other hand, the presence of calcium in the nutrient solution has been observed to affect the uptake of other ions[2]. In general, calcium inhibits the rate of sodium absorption[3], but promotes the uptake of potassium[4], sulphate[5], chloride[6], and phosphate[7]. In the present study, it has been shown that presence of Na^+ ions markedly inhibits the development of pods in peanuts, although it has no ill-effects on the vegetative growth of the plants.

The seeds of *Arachis hypogaea* var. Big Japan were obtained from Agricultural Research Station, Sabour, Bhagalpur. The plants were grown in 12 inch glazed pots containing acid washed silica sand, as described by HEWITT[8]. 5 or 6 plants were grown in each pot. ARNON and HOAGLAND's[9] nutrient solution was used as the control solution. Sodium is generally considered as 'inert' element for the growth of higher plants, although it is required for the growth of the plants, and, at least in some cases there is a specific requirement of sodium[10,11]. To check if sodium could modify the growth effects or the metabolism of calcium, another set was run in which the normal nutrient solution was supplemented with 0.006 *M* NaCl/l of nutrient solution. The nutrient solution was given to the plants thrice a week and distilled water was given once a day every day. The 4 harvests were taken at different growth intervals viz. 25, 40, 55 and 70 days,

Showing the changes in dry weight of different parts of peanut, expressed in g/plant, at first harvest (25 days) and second harvest (40 days).

	Control	Na^+ set
First Harvest		
Root	0.35	0.35
Stem	0.41	0.37
Leaves	0.99	1.32
Entire plant	1.75	2.04
Second Harvest		
Root	0.68	0.56
Stem	1.90	1.46
Leaves	2.26	2.44
Entire plant	4.84	4.46

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and the various morphological observations and growth data were recorded at each harvest.

The plants of the set receiving 0.006 *M* NaCl in addition to normal ARNON and HOAGLAND's solution showed good vegetative growth and dark green leaves as compared with the control set. There was no indication of any toxic effect on the vegetative growth of the plants. At first and second harvest, the leaves in sodium set showed more dry weight than the control (Table). This increase in dry weight is in agreement with the results of BROWNELL[11] and others[12,13].

A marked effect on pod development was, however, observed. Quite a large number of pegs failed to develop into pods, the tips of the gynophore turned brown and showed necrotic symptoms (Figures 1 and 2). Those pegs which developed into pods, were smaller and with necrotic lesions. It would appear that the presence of Na^+ ions around the pegs inhibits the development of the pod. It may be that the Na^+ ions inhibit the uptake of Ca^{++} ions by the pegs or the growing pods. That calcium inhibits the rate of Na^+ absorption is known, and an interaction between the 2 ions in pod formation appears plausible. The observation that the vegetative growth of the plants is not affected by Na^+ might indicate that, at the root level, sodium may not interfere with the uptake of calcium, but that the calcium uptake directly by the developing pods is inhibited by the Na^+ ions[14].

Fig. 1. Entire plants of peanut (IV harvest, 70 days) showing inhibition of pod development, but no toxic effect of NaCl, on the vegetative growth, as compared to the control plants.

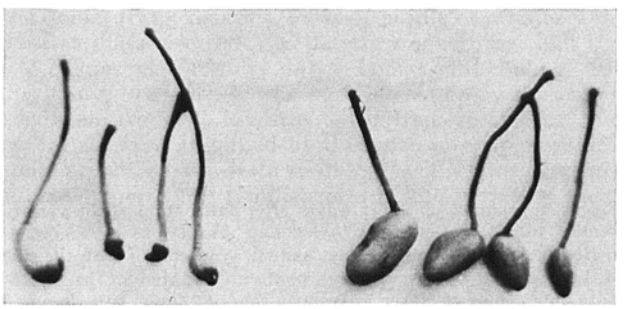

Fig. 2. Pods showing black necrotic lesions, in presence of NaCl, along with normal pods from control plants.

Zusammenfassung. Natrium Chloratum (0,006 *M*) hemmt das vegetative Wachstum der Erdnusspflanze nicht, wohl aber die Entwicklung der Hülsenfrüchte selber. Es wird angenommen, dass die Natrium-Ionen die Calciumaufnahme an der Wurzel nicht stören, dass sie aber von den sich entwickelnden Hülsen in der Nähe der Natrium-Ionen direkt gehemmt wird.

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The Role of the Cerebellum in Blood Pressure Regulation

In previous papers from this laboratory, the distribution of pressor and depressor neurons in the brain stem was studied by means of the transection method[1,2]. It was shown that the pressor response to peripheral nerve stimulation is reversed to blood pressure fall by cutting the brain at a critical level. The latter was found in the cat at an inter- to post-collicular plane, while in the rabbit it was placed somewhat more rostrally, viz. at a pre- to intercollicular level.

It was however recognized that intercollicular transections destroy also the connections of the anterior brain stem with the cerebellum[2]. Therefore the role of this structure in vasomotor reflexes requires clarification. It is known that stimulation of various parts of the cat's cerebellum induces blood pressure rises, the most sensitive region being the fastigial nucleus[3]. We have confirmed these observations by probing systematically the cerebellum of the conscious rabbit with bipolar concentric electrodes. From about 60 points, scattered through all parts of the cerebellum, only hypertensive responses could be evoked, but we have been unable to obtain any depressor reaction. This result is in apparent disagreement with the findings of ZANCHETTI and ZOCCOLINI[3] on the thalamic cat, where sometimes a blood pressure fall was encountered when the cerebellum was stimulated in the interval between 2 sham rages. On the other hand, exci-

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