cemented sides, the gritty conglomeratic stuff in the grooves suggesting as if the drains are filled with cement concrete (see the photo). The senior author was struck by its resemblance to the surface structures observed at places along the great Moine thrust plane in Scotland.

It may be mentioned in this connection that there runs a great thrust-fault along the foot of this spur which has brought the Kamlials in bottom of the valley against the Purple Sandstone of the spur, and that the Purple Sandstone is overlain by the Neobolus shales and other stratigraphical formations characteristic of the eastern part of the Salt Range.

According to Dr. Gee, pebbly bed at the top of the Purple Sandstone series is widespread and is a normal horizon of the series. We met Dr. Gee at Khewra at that time; and during two of his excursions, he showed us this pebbly bed in the Dandot gorge as well as in the Khewra gorge. The typical thrust plane structure seen by us at the above locality can, therefore, be only regarded as local. The Salt Range is now politically out of bounds to Indian geologists, but the Pakistan geologists can investigate this thrust plane in detail.

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THE HOME OF MONAZITE IN THE VIZAGAPATAM AREA

IN a recent paper,[1] the occurrence of monazite, zircon and other minerals in the beach sands of Vizagapatam was described. Subsequently, on a study of the origin of the Waltair Highlands by the authors of this note (under publication), the monazites were traced to the alluvium in the streams flowing down the hill ranges of this area. In order to fix definitely the home of this monazite, a very careful examination of the pegmatite veins which cut through the khondalites underlying the red loam of the Waltair Highlands was made. These pegmatites consist of grey, pink, and white felspars, white and bluish quartz, small books of biotite mica, opaque iron ore minerals, and some dark minerals with greenish tinge and sub metallic lustre. The pegmatites occur as lit-par-lit injections, veins, or sometimes as lenses and veinlets in the khondalites. Representative samples from four different pegmatites were pulverised and passed through 60-mesh sieve, and panned. In all the samples, the tailings show considerable quantities of monazite and zircon. The monazite is easily distinguished in the concentrates by its greenish yellow colour. The dark mineral with submetallic lustre occurring in the pegmatites was tested by physical and optical methods and identified as monazite.

Though granites occur in the vicinity of the khondalites as intrusives, the pegmatites do not show intrusive relationship with the granites. It is of interest to recall that Masillamani and Chacko[2] and also Masillamani[3] recorded the occurrence of monazite in pegmatites which are intrusive into the khondalites and charnockites in some areas in Travancore. Tipper[4] is of the opinion that the bulk of the monazite in the shore sands is derived from the gneisses of Travancore. Detailed investigations are in progress extending the enquiry to other areas and formations. The results of the investigations carried out so far show that in the Vizagapatam area, the pegmatites cutting through the khodalities carry the bulk of the monazite.

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INFLUENCE OF DIETARY FACTORS ON THE ENDOGENOUS CALCIUM EXCRETION IN THE ALBINO RAT

EVEN on a calcium-free diet, there is a small but distinct negative calcium balance as evidenced by the results of Jones.[1] The measurement of this endogenous calcium excretion is necessary while studying the availability of calcium. It is known that protein, fat and phosphorus in the diet influence the absorption and utilisation of calcium.[2, 3, 4] The effect of these dietary constitutents on the endogenous calcium excretion in the white rat forms the subject-matter of this note. These data would be of value in studying the physiological inter-relationships that exist in the metabolism of calcium on the one hand and these dietary factors on the other.

Six healthy adult rats were taken and their normal endogenous calcium excretion was measured for a period of one week. During this period they were fed on a diet adequate in all respects but free from calcium.* After keeping them on a normal stock diet for one week they were given three other diets which apart from

(*Values represent calcium excreted in mgm. for a period of one week*)

Rat No. and sex	Calcium free diet			Calcium and protein free diet			Calcium and fat free diet			Calcium and phosphorus free diet		
	Urinary	Faecal	Total	Urinary	Faecal	Total	Urinary	Faecal	Total	Urinary	Faecal	Total
1 M ..	6·3	23·6	29·9	5·3	29·9	35·2	7·8	38·7	46·5	9·7	38·8	48·5
2 M ..	5·8	20·3	28·1	5·9	25·1	31·0	6·2	35·1	41·3	9·6	37·1	46·7
3 M ..	7·5	25·1	32·6	7·2	30·4	37·6	8·6	39·8	48·4	10·2	86·5	49·7
4 M ..	4·9	22·1	27·0	5·6	27·8	33·4	7·2	36·1	43·3	8·1	35·2	43·3
5 M ..	5·6	25·6	31·2	5·6	20·2	34·0	6·7	37·2	43·9	6·5	32·7	39·2
6 M ..	5·4	19·8	25·2	5·9	20·6	26·5	7·2	30·4	37·6	7·5	31·6	89·1
Average	5·9	22·8	28·7	5·9	27·2	33·1	7·3	36·2	43·5	8·6	35·3	43·5

being free from calcium were deficient in protein, fat and phosphorus respectively. Between successive experimental periods the rats were kept on the normal diet for one week. The calcium excretion of the rats on these diets was also measured.

Urinary calcium was measured according to the methods of Shol and Pedley.[5] Fæcal calcium was estimated by the method of McCrudden.[6] The data for calcium excretion of individual rats are given in the above table.

The effect of protein, fat and phosphorus on endogenous calcium excretion is evident from the above data. The absence of protein in the diet does not affect urinary calcium excretion. But fæcal calcium and the total endogenous excretion are slightly increased. The withdrawal of fat or protein increases both urinary and fæcal excretion. The fæcal calcium particularly is increased to a very large extent.

These results therefore show that under conditions of calcium deprivation or very low calcium intake, protein and phosphorus have a calcium sparing action. They also lend support to the fact that for efficient calcium utilisation, moderate amounts of protein fat and phosphorus are necessary in the diet. The increased urinary excretion is due to the withdrawal of calcium from the bones leading to an excretion through the renal channel. The origin of the increased fæcal excretion is not definite. Experiments are in progress to see whether this calcium has originated from the digestive juices or is due to the pouring in of calcium from the blood stream to the lumen of the gastro-intestinal tract as suggested by Steggarda, *et al.*[7]

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* The composition of the calcium free diet was. corn starch 51, cane sugar 20, cocoannt oil 10, casuin (freed from calcium according to Jones)15, and calcium free salt mixture 4. The diet was supplemented with vitamins A. D. and also the vitamins of the B complex group. The diet contained 6·2 mgs. calcium/100 gms.

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Note.—It is to be noted that the values for endogenous calcium excretion in the above cases are rather high being about twice as much as the figures reported by Jones. The traces of calcium present in the diet cannot however completely explain the rather higher calcium excretion in these cases.

SOME NEW AMINOTHIAZOLES

The discovery by Smirk and McGeorge[1] of the remarkable blood pressure raising property of S-methylthiourea sulphate and the discovery by Rose et al[2] of the promising local anæsthetic property of thiazole derivatives led us to the synthesis of a few new compounds of types (A) and (B) which could be considered as cyclised derivatives of both S-methylthiourea and of aminothiazole and hence would be possible pressor anæsthetics.

Following the known methods[3,4,5,6] compounds 1, 2, 3, and 4 (Table 1) were prepared by refluxing phenacylbromide with *m*-and-*p*-nitro as well as *o*-methoxy-phenythioureas and *β*-naphthyl thiourea respectively and isolating the products and purifying them from suitable solvent. The action of thiourea on 3 : 4 : 5—triacetoxy *ω*-bromoacetophenone led to the formation of 4- (3′ : 4′ : 5′ triacetoxy)-phenyl-2-aminothiazole which was isolated as its hydrobromide 5 (Table I) the base being unstable. The reaction of phenyldithiobiuret with phenacyl-and *β*-napthacylbromides even when conducted in monomolecular proportions led to the formation of substituted 2-thiazolyl 2′-iminothiazolines (1 and 2, Table II) of type (B).