Table 1 *Determination of reducing sugars in honey.*

Brand of Honey	Graphite [Ag_2S-CuS] electrode (%)	Lane and Eynone's method. (%)
A.	11.6	11.6
B.	25.0	25.0
C.	25.7	25.6

(average of four determinations)

The standard deviation of the proposed method was 0.0075 for 0.5 mg of glucose in the series of six determinations. The method was also applied to determine the different brands of honey in the market. Several samples were determined by both the proposed method and the Lane and Eynone's method (table 1). There is satisfactory agreement between the results obtained by these two methods.

The routine methods of analysis to determine sugars in a variety of samples are mostly based on the reducing action of sugars in alkaline copper sulphate, involving gravimetric or volumetric[7-8] techniques which are generally time-consuming. In the present method an ion-selective electrode is utilized for the determination of reducing sugars. The unreduced Cu(II) is directly related to amount of reducing sugars under specific conditions, using a calibration graph prepared with standard glucose solutions.

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TERMITE MOUNDS IN GEOCHEMICAL PROSPECTING

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THERE is extensive literature on termites and their structures dealing with their biological[1,2] and ecological[3] aspects; but studies on their geological aspects are scanty and scattered. Varahamihira (A.D. 505–587), a renowned astronomer, in his magnum opus *Brihat Samhita*, discussed the hydrological significance of the termite mounds[4]. A few recent studies dealt with the microstructures developed during the diagenesis of the termite mounds[5], and with their magnetic properties[6]. The present study deals with the possible use of the termite mounds (figure 4) as a guide to locate underground ore deposits. For this purpose, the termite mounds occurring in the mineralised zones of chromium, vanadium, and copper, were collected from the following areas:

(i) Chromite in Kondapalli, (figure 1) included in the Survey of India toposheet No. 65 D/10. Here, the geological formations consist of khondalite and charnockite suite of rocks and ultramafics; these rocks are traversed by quartz and pegmatite veins. Geology of the area has been studied by earlier workers[7,8].

Chromite occurs as massive bodies, irregular veins, and lenticular and pocket-like lenses. Chromite occurrences and their mineralogical characters have been studied by earlier workers[8-10]. An area of 16 km^2 is covered for collecting samples of soils and termite soils in the mineralised zone and its surrounding country.

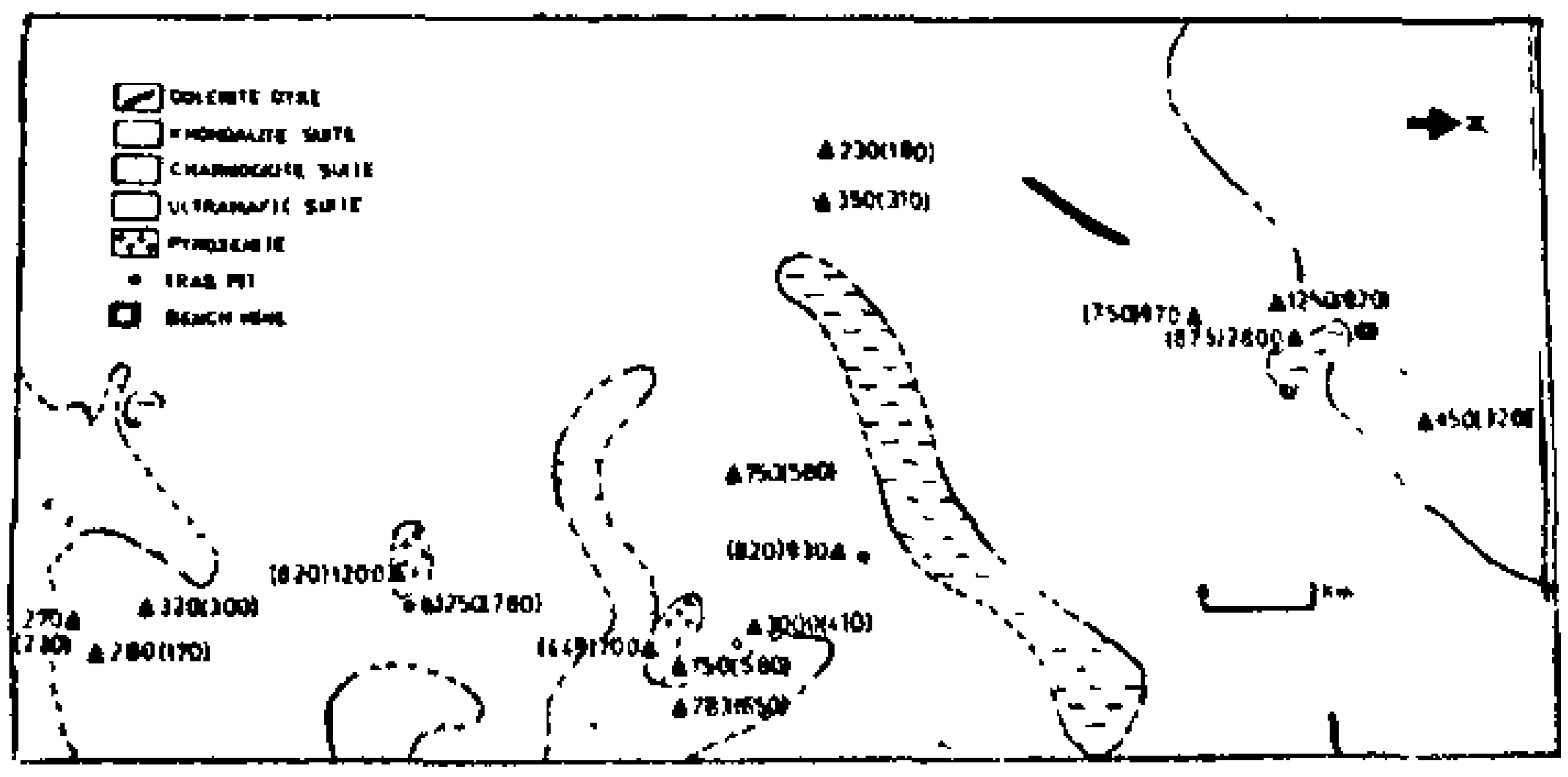

Figure 1. Geological map of the Kondapalli chromite mining area. In figures 1, 2 and 3, the concentrations of the ore elements are given for the termite mounds, the values given in parenthesis are those of their adjoining surface soils.

(ii) Vanadiferous magnetite in Putrela (figure 2); here the ore is associated with quartz and pegmatite veins traversing khondalite covering an area of 6 km^2 included in the Survey of India toposheet No. 65 C/12. The geology of this area has been studied by earlier workers[11,12].

(iii) Copper in Mailaram occurs as chalcopyrite and it is associated with quartz chlorite schist, sample collection was made in an area of 6 km^2 included in the Survey of India toposheet No. 65 C/NE (figure 3). Geology of the area has been studied by some workers[13], while others carried out geochemical investigations[14,15]. Trace element analysis has been carried out for the respective ore element in the termite soils and their adjoining surface soils (collected at a distance of 3 m from the termite mound) in each mineralised zone and its surrounding areas, with the aid of Jorrell-Ash grating spectrograph, using silicon: 297.03 nm as the internal standard[16]. The values of the termite mounds and of their adjoining soils (given within brackets) are shown in figures 1, 2, 3. From the data, it is clear that the termite soils contain higher concentration of the ore element than in their surface soils in all the three mineralised areas.

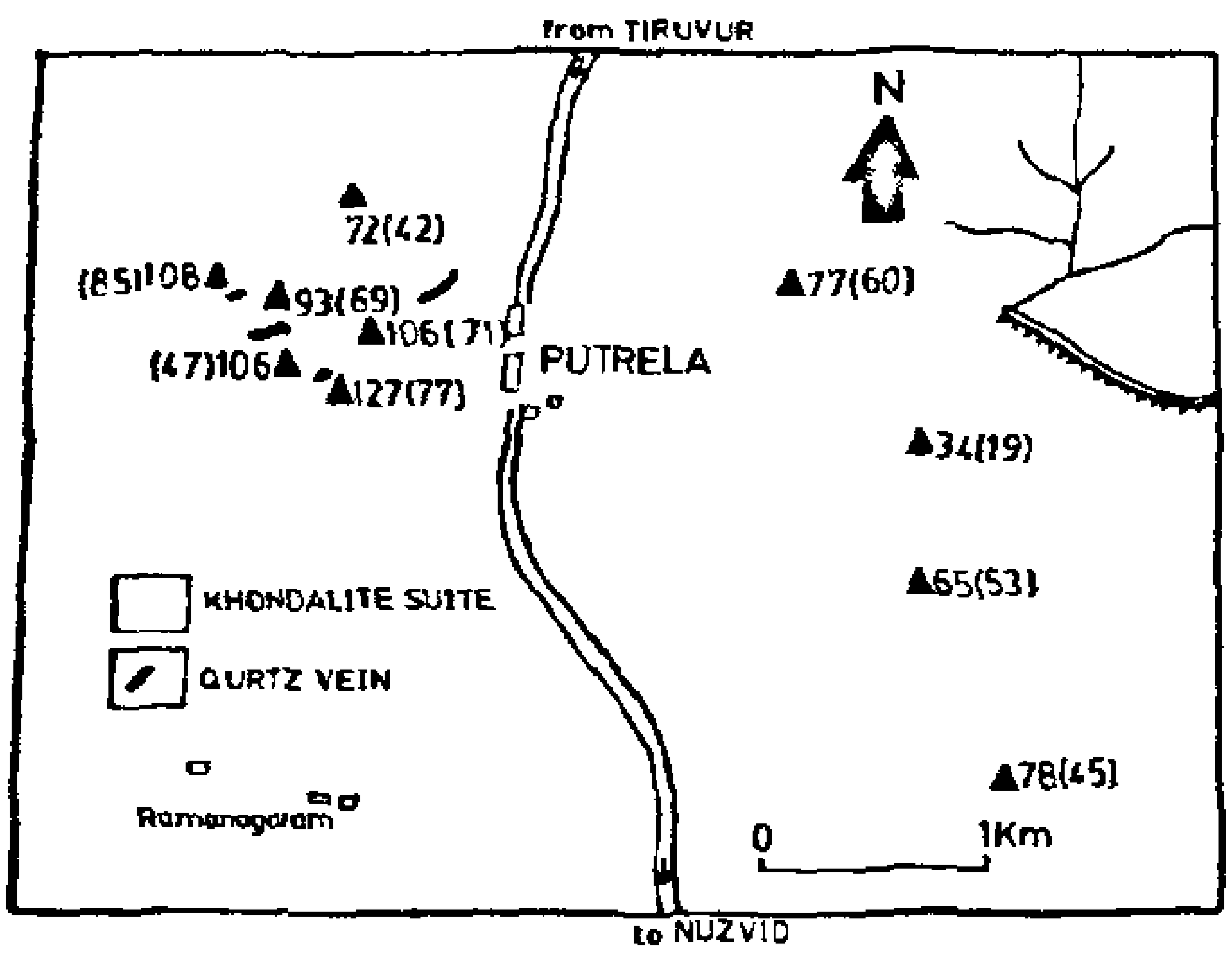

Figure 2. Geological map of the Putrela vanadiferous magnetite area.

In order to determine the vertical distribution of the ore element, a study was undertaken in the Putrela area. Samples of soil profiles were collected with the aid of an auger sampler from the base of the termite mound, with 40 cm interval, till the depth of the parent rock is reached. Such profile samples were also obtained in the ordinary soil occurring in the vicinity of the termite mound. The distribution of vanadium in these profiles is shown in table 1. From this, it is evident that there is higher concentration of the ore element in the termite soil than in its adjoining surface soil not only in the samples at the ground level but also at successively lower depths below the ground level.

Earlier studies have shown that, relative to the surface soil, the termite mounds show an increase in calcium, potassium, and magnesium[17,19] and also in phosphorus[20,21]. Thus the termite mounds show an increase not only in some of the major elements of the normal soils but also in the ore-forming elements in the mineralised areas.

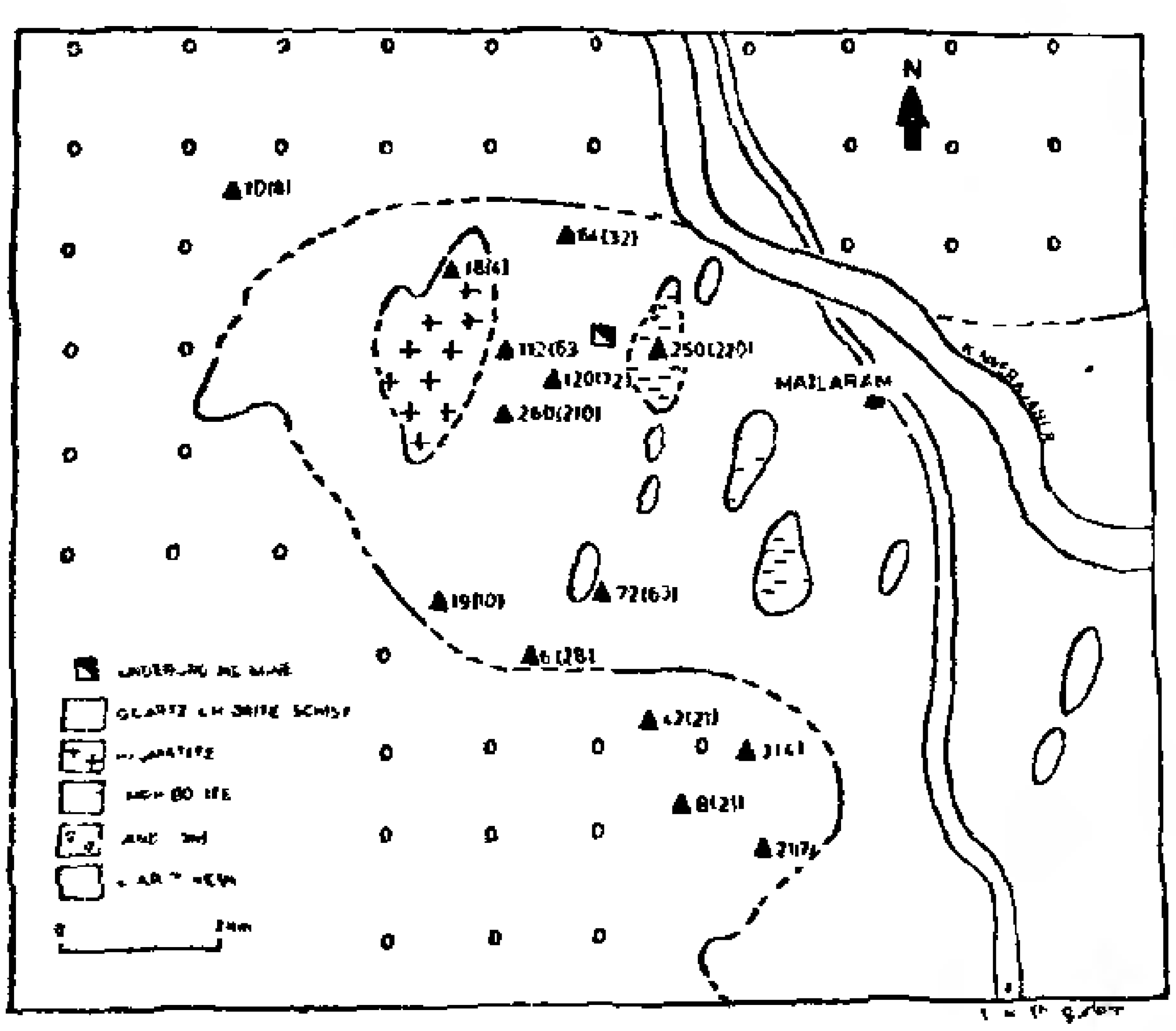

Figure 3. Geological map of the Mailaram copper mining area.

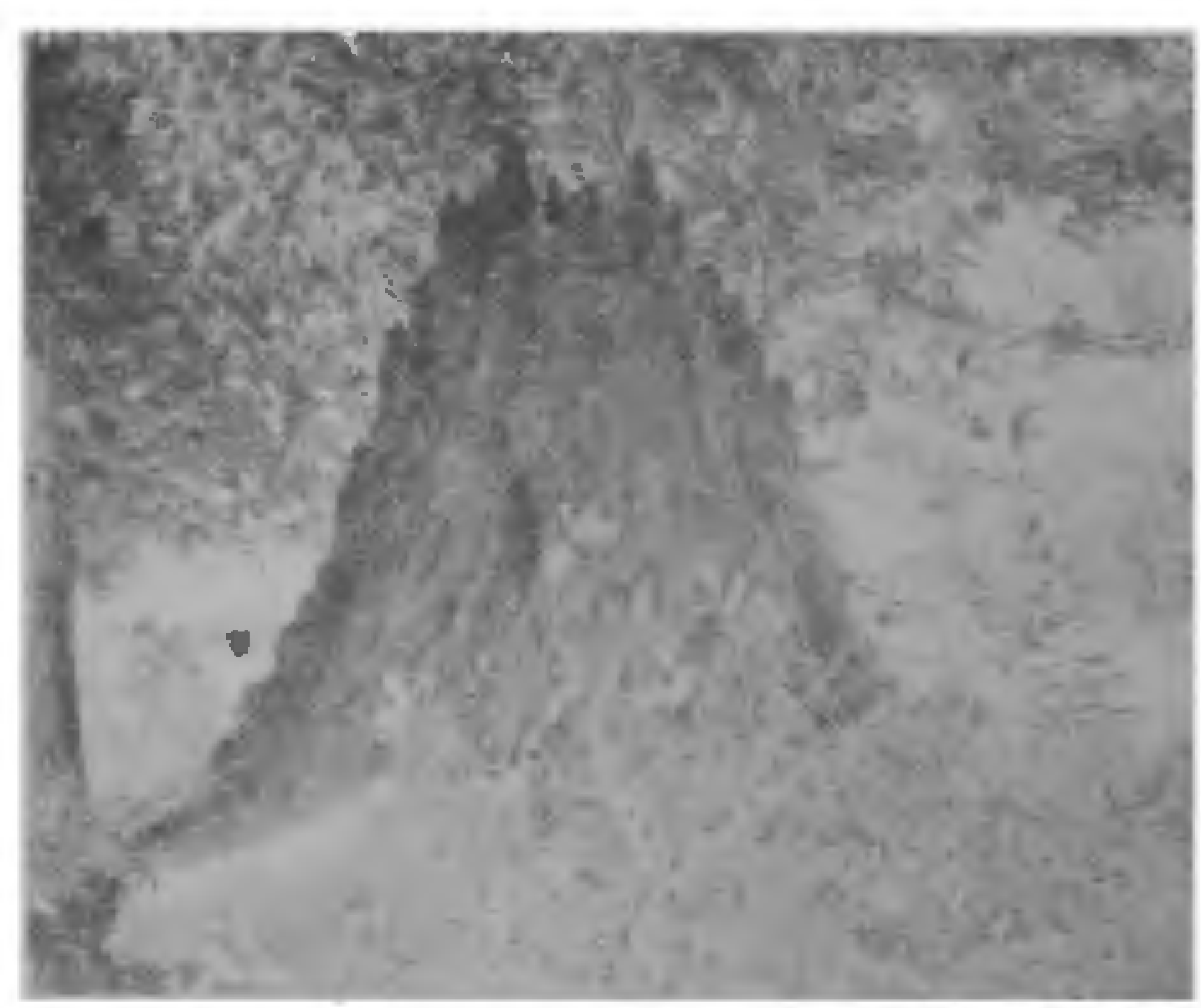

Figure 4. Termite mound in the mineralised zone of vanadiferous magnetite in Putrela.

Table 1 *Distribution of vanadium (in ppm) in the samples of the soil profiles through a termite mound and its adjoining surface soil.*

Depth (cm)	Through the base of the termite mounds		Through ordinary soil	
	(a)	(b)	(a)	(b)
Surface	77	106	60	71
40	90	121	72	74
80	115	138	74	82
120	—	159	93	97

In biogeochemical prospecting, several samples (from more than 100 sampling points) of plants and/or soils are collected in a grid pattern, to determine the geochemical anomalies[22,23]. Harris[24] pointed out that the termite mounds, which contain a large proportion of the subsoil material, can be used in determining the geochemical anomalies. Watson[25] has shown, with the aid of the gold content in termite mounds, the geochemical anomaly in the mineralised area of gold in Kalhari sands in Rhodesia (presently Zimbabwe).

Thus, the termite mounds constitute an important tool for rapidly carrying out geochemical prospecting for concealed ore deposits even in a completely virgin territory.

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CARBONATITE DIKES IN DHANOTA-DHANCHOLI HILLS, NARNAUL, HARYANA

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THIS report deals with the occurrence of two carbonatite dikes in the paragneisses of Dhanota-Dhancholi hills located 13 km SW of Narnaul (28°03′ : 76°06′). These hills are known for metasomatic magnetite ore bodies[1]. The gneisses trend NNE-SSW which also happens to be the regional strike of Delhis.