TABLE I

Visible spectral data for [M(Aminoacids)(dien)] NO_3 complexes

	ν, a	(ϵ_2)	ν_2	(ϵ_2)
[Co(L-Aspartic acid)$(NH_3)_3$]*	495 mμ	(102)	356 mμ	(122)
[S-cis Co(L-Asp)(dien)]NO_3*	480 mμ	(100)	352 mμ	(81·8)
[Co(Leu)(dien)Cl]NO_3	465 mμ	(105)	332 mμ	(90)
[Ni(Leu)(dien) Cl)]NO_3	550 mμ	(90)	355 mμ	(100)

* Spectra reported in ref. 4.

to that of cobalt(III) complex. The product, a violet coloured oil, on scrubbing with acetone gave a violet solid which was dried under vacuum in a drying pistol at 56° C (yield 0·4 g).

Found C 33·70, H 6·85, N 19·48, Ni 16·48 [Ni (dien) (Leu)]NO_3 *requires* C 33·88, H 7·05, N 19·75, Ni 16·56%.

In the ir spectra of the parent aminoacids the –COO group absorbs at 1710 cm^{-1} whereas in the cobalt(III) complex C–O stretching band is at about 1630 cm^{-1} and at 1650 cm^{-1} in the nickel(II) complex, which indicates the presence of coordinated – COO group.

Molar conductance of aqueous solution indicates two ions for the nickel(II) complex (125 $ohms^{-1}$ cm^2 $mole^{-1}$) and three ions for the cobalt(III) complex (*260 $ohms^{-1}$ cm^2 $mole^{-1}$*). *The complex [Co(dien)Cl_3]* is known to readily aquate to form [Co(dien) $(OH_2)_3]^{+3}$, and therefore, taking into account the aquation process, the molar conductance value is reasonably consistent with the proposed structure. Magnetic susceptibility measurements show that the complexes are diamagnetic. This is consistent for d^6 Co(III) low spin complex and indicates a square planar structure for Ni(II) complex (Table I).

The visible spectra observed for the Co(III) complex above is similar to the reported mixed ligand complexes of Co(III) involving amino acid snd diethylenetriamine.

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MAGNETIC ORIENTATION IN TERMITE MOUNDS

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DESCRIPTION of the termite mounds as a hydrologic indicator in the ancient Sanskrit work, *Brihat Samhita*, reveals that the termite mounds exhibit preferred direction of physical orientation (Prasad[6]). The famous, gigantic termite (*Amitermes meridionalis* Froggatt) mounds, called 'magnetic mounds' or 'meridional mounds' in the Northern Territory of Australia exhibit an obvious lateral compression which invariably gives them north-south orientation; the mounds built by certain other termite species (*Amitermes laurensis* Mjoberg and *A. vitiosus* Hill) in tropical Australia also exhibit similar north-south orientation of their structure (Gay and Calaby[2]). The termite mounds in South Africa have also been reported to exhibit preferred orientation (Marais[5]). The termite 'queen' invariably lies parallel to magnetic north-south direction in its cell in the interior of a live mound (Deoras[3]). Preferred orientation of termite structure has been experimentally investigated and proved by Becker[1].

The objective of this note is to examine magnetic orientation in the termite mounds. For this purpose the termite mounds, occurring on the ground underlain by quartz-magnetite rocks around the Konijedu hills (Survey of India toposheet No. 66 A/3) near Ongole in the Prakasam District of Andhra Pradesh, were selected.

In this area, innumerable termite mounds occur with a range of 0·5–1·0 m in height, and 0·5–2·0 m in base diameter. A termite mound was vertically cut open and oriented samples, in the form of 6″ cube, at three different parts of the mound, were collected near the summit (1*a*, in Table I), at the middle along the axis from the summit to the centre of the base (1*b*), and near the middle of the base (1*c*). Like this, oriented samples were collected from two mounds. In addition to this, oriented specimens, taken near the summits of 9 other termite mounds, were also collected. The collection of oriented samples was carried out in the field in the same manner as is done in the petrofabric analysis of rocks.

TABLE I

Natural remanent magnetisation of termite mounds

Sl. No.	Deflection in cm.			J_n × 10^{-5} e.m.u./g
	X Direction	*Y* Direction	*Z* Direction	
1 *a*.	—2·1	0·6	7·1	2·2
1 *b*.	2·0	—0·1	10·2	2·6
1 *c*.	—2·0	0·6	4·6	1·6
2 *a*.	—1·0	—1·4	12·5	6·9
2 *b*.	—1·9	0·9	— 8·7	8·2
3.	0·4	—3·6	— 4·0	1·4
4.	2·2	—2·0	— 6·0	2·5
5.	1·0	—5·4	6·1	1·4
6.	—3·5	—3·1	—16·0	5·1
7.	0·4	—0·5	1·0	0·8
8.	—4·2	—5·5	5·7	2·6
9.	1·0	1·0	— 1·2	0·7
10.	0·5	0·8	5·3	1·3
11.	—0·4	2·5	7·4	3·8

With the aid of a sensitive astatic magnetometer the average deflection which reflects the intensity of natural remanent magnetisation, was determined for different directions successively keeping the specimen along the north-south (*X*), east-west (*Y*), and the up-and-down direction (*Z*). The deflections, recorded in the magnetometer for these directions, and the intensity of natural remanent magnetisation (J_n) for the entire samples are shown in Table I. It shows that the intensity of magnetisation is conspicuously high along *Z*, *i.e.*, up-and-down direction.

It may be noted that the present magnetic field (total intensity) around the area of study, *i.e.*, Ongole area, is a vector dipping only about 14° from the horizontal, or in other words, having a predominantly horizontal component and comparatively much smaller vertical component. From the data (Table I) it is inferred that, in the prevailing Earth's magnetic field, the intensity of magnetisation is relatively much higher along *Z* (up-and-down) than along *X* (north-south) or *Y* (east-west) directions of the termite mound.

This study reveals that the termite mounds show preferred orientation not only in their physical structures but also in the intensity of magnetisation, supporting the view of Karl von Frisch (1974, p. 139) that termite activity is guided by the Earth's magnetic field.

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PRELIMINARY NOTE ON THE PRESENCE OF JURASSIC HOLOTHUROIDS FROM JAISALMER, RAJASTHAN

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HOLOTHURIAN sclerites from the Jurassics are well known from various parts of the world[1]. However, their record from India is meagre and restricted to a few reports from the Kutch region[2–4]. The present note records for the first time the occurrence of well

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