it difficult to count their number (Tables 1, 2). Lysis of the pigment cells might be due to absorption of certain harmful substances (including zinc chloride), because melanin can bind with aromatic and cyclic compounds and cations[7]. Similar lysis and massive destruction of the melanophores following mercury salt treatment have also been observed by Rajan[5]. Hence evaluation of the phenomenon of total pigment cell lysis can be used as an important but simpler parameter for detecting acute toxicity of heavy metal contamination. The disintegration of the pigment cells might also point towards the important but undefined role played by them to combat the toxicity of the heavy metal salt and any breakdown of the barrier protective function (after 96 h) offered by these cells might be one of the major reasons for the death occurring in maximum number at this period. According to Roberts[8] melanophores also play an important role in the development of most skin lesions by virtue of their presence immediately below the delicate epidermis, where they are subjected to traumatic damage of many kinds caused by several heavy metal salts[9].

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Kodomali kimberlitic diatreme, Raipur District, Madhya Pradesh

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Discovery of Bahradih, Payalikhand and Jangra kimberlitic diatremes in the Raipur district of Madhya Pradesh was reported in the News Bulletin of the Geological Survey of India, Central Region[1] (GSI News, March 1993). Another kimberlitic diatreme is being reported by the authors south of Kodapali village (location: Kodomali – 20° 11′ 35″ : 82° 15′ 00″, Toposheet No. 64 L/4), in the Mainpur Tahsil of Raipur district. This diatreme is almost centrally placed in the NW–SE trending lineament between Bahradih and Payalikhand and occupies a moderately vegetated topographic depression within a rolling granitic pediplained country. The only surface manifestation of the diatreme is in the form of concentration of specific heavy minerals of kimberlitic affinity in the soil profile.

THE Kodomali diatreme has an approximately circular outline more than 300 m across making it the largest of the four diatremes discovered so far. This diatreme like others is also enclosed within the Bundeli granite[2]. Unlike other diatremes which have yellow ground, the Kodomali diatreme shows fresh rock beneath 1 m veneer of soil.

The Kodomali diatreme exhibits typical kimberlitic clast-matrix texture with clasts of ultramafic affinity, and macrocrysts of olivine (altered to antigorite), chromite, spinel, pyrope and enstatite with glassy nodules set in an aphanitic groundmass. Pyrope macrocrysts (up to 1 cm across) mostly show rounding effects resulting from magmatic corrosion of dodecahedral faces. Pyrope grains are also bordered by greenish kelephytic rims. Unlike the Bahradih diatreme[1] the Kodomali diatreme rarely contains phlogopite and sanidine. The heavy minerals separated from the top soil include pyrope garnets of purplish, pink, red, red-orange and orange colours, chromite, spinel and enstatite.

In thin section, macrocrysts of fresh olivine with some serpentinization along cracks are prominently seen. Brown coloured clasts of ultramafic composition (mostly altered to serpentine) contrast with greenish aphanitic matrix. Heavily altered subhedral grains of low RI may indicate the existence of sanidine. Spinels show characteristic octahedral outline. Most of the clasts and macrocrysts show embayment features because of resorption by ultramafic groundmass. Flowage around macrocrysts and clasts is indicated by orientation of devitrified glass and string shaped opaques around the former. There is a general absence of the brecciated look unlike the rocks of Bahradih and Payalikhand diatremes. These characteristics are typical of hypabyssal facies kimberlites[3].

As the Kodomali diatreme is exposed almost at the same level as the other bodies belonging to the diatreme facies, it is likely to represent a different pulse of kimberlitic emplacement. Payalikhand diatreme has been

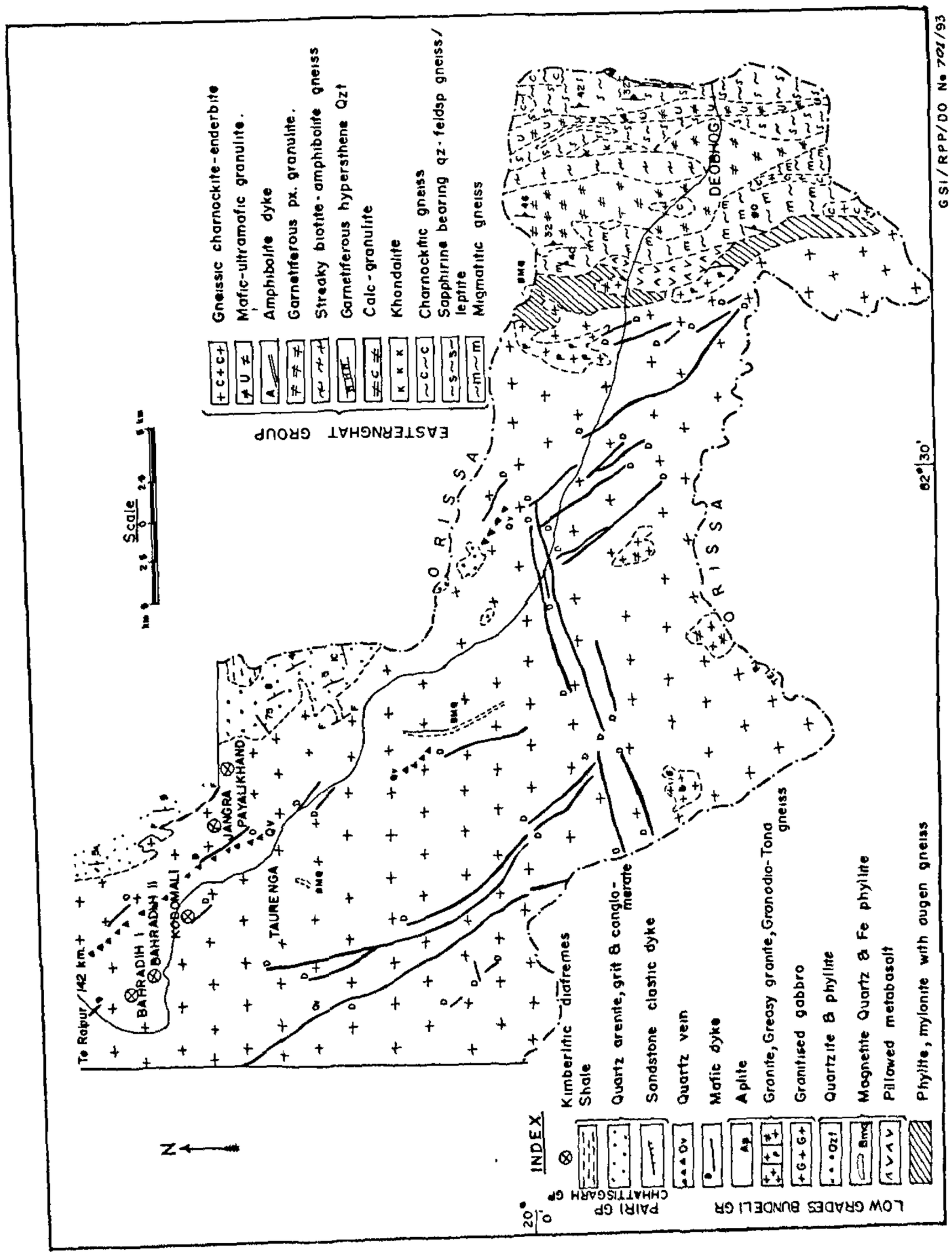

Figure 1. Location of Payalikhand–Bahradih Kimberlites, Raipur District, M P.

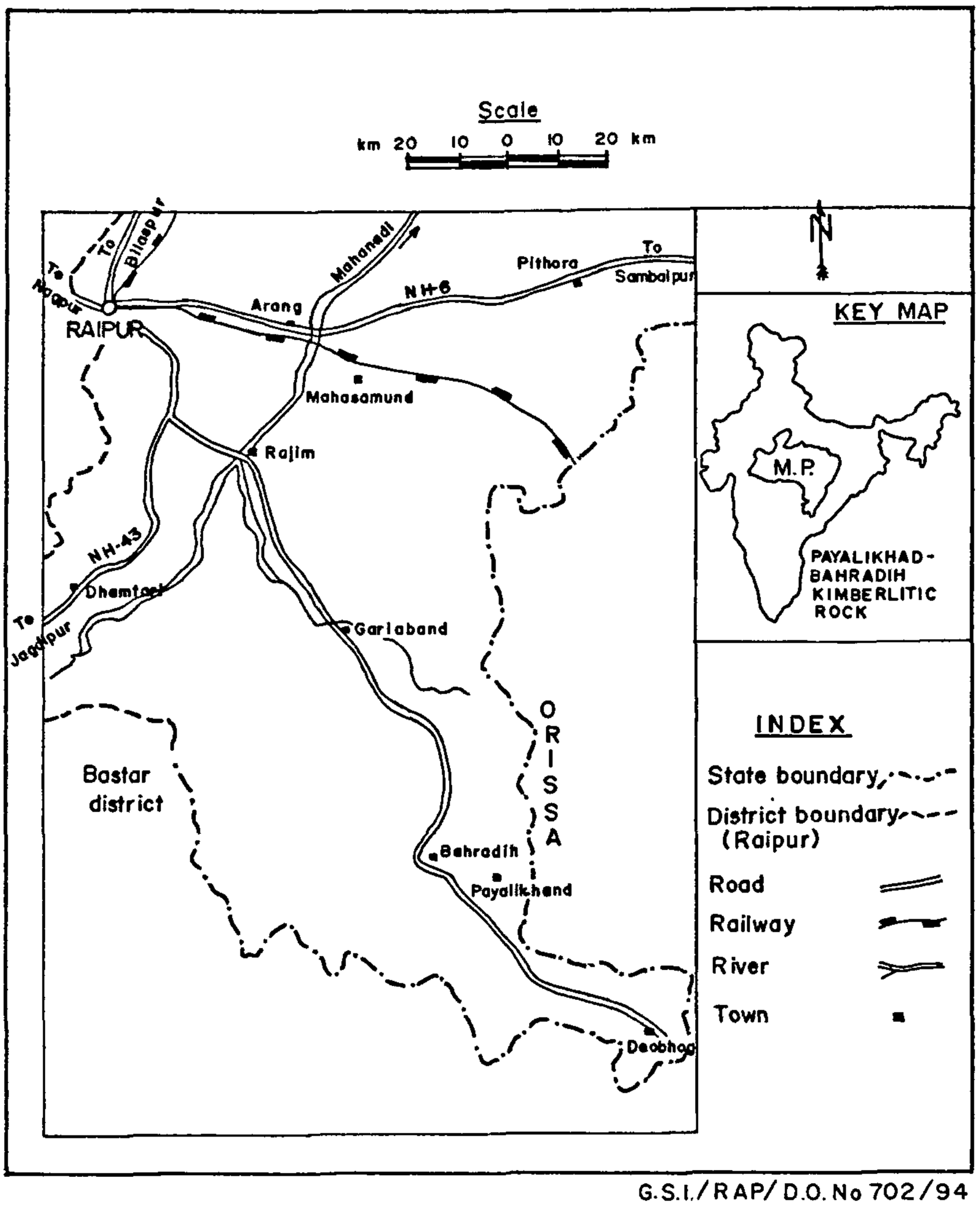

Figure 2. Geological map of Payalikhand–Deobhog area, Raipur District, M P.

found to contain xenoliths of hypabyssal facies kimberlite[2] similar in nature to the Kodomali kimberlite. Thus the Kodomali diatreme may belong to an antecedent pulse of kimberlitic intrusion.

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