

cellular and watery endosperms. During the development the watery endosperm becomes cellular and spongy meat, from which the developing embryo draws its nourishment. This is common in palms. In animals the viviparism is quite different and the entire development takes place within the mother's uterus. Mother directly supplies food to the foetus from her body through placenta. While recording the details of germination in normal coconut plants, a totally different viviparism was observed. Formation of spathe is seen but inflorescence, peduncle, etc. are not noticed inside.

Once the spathe breaks open a seedling comes out in each spathe. Before germination, normal seeds have dormant period. It varies in various plants. The longest dormancy period is noticed in lotus growing in Kashmir.

Dormancy is totally absent in viviparous plants.

However, in *Cocos nucifera* the formation of seedling is not from any seed, but directly from the reproductive cells in spathe which suggest that it is not a typical case of viviparous. Besides this, the conditions are not congenial for this process. Soil is red loamy. Salinity and water logging are also not noticed. Under these environmental conditions viviparous development is ruled out. The other possibility is the formation of 'Witches' broom' type of abnormal growth due to infection of inflorescence as noticed commonly in *Mangifera indica*. In mangoes, the whole inflorescence turns into a leafy structure giving the appearance of 'Witches' broom'. Except the first cotyledonary leaf the remaining leaves resemble the normal

seedlings. This is a case of abnormal development. Though it appears like a viviparous growth, it is a case of abnormal germination from the reproductive cells of inflorescence.

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New find of diamond-bearing kimberlite in Raipur district, Madhya Pradesh, India

In 1991-92, the Directorate of Geology and Mining, Madhya Pradesh initiated detailed survey and petromineralogical study of the area of southeastern part of the Raipur district, MP. During the survey an altered yellowish-green coloured, highly weathered rock of kimberlitic affinity was encountered within the coarse grained granite, near the village Bahradih.

The area is located about 2 km SE of village Bahradih (20° 13' 30" : 82° 12' 13") and included in survey of India Topo-

sheet No. 64 L/4, (Figure 1).

The lithounits exposed in the area belong to the Archean and Upper Proterozoic (Chhattisgarh Supergroup) and are represented by granite/granite gneiss, impersistent conglomerate/gravelbed, overlain by sandstone, forming Khariar plateau.

Exposure of the yellowish green weathered kimberlitic rock with a thin cover of black soil, having maximum thickness of about 0.30 m, is in the nala cutting in the coarse grained

porphyritic granite terrain. It is occupying an area of about 0.04 km² and its depth persistence up to 10.50 m has so far been confirmed.

Petromineralogical study of this weathered kimberlitic rock showed the presence of Serpentine (after Olivine) with subordinate pyrope garnet, phlogopite, magnetite, ilmenite, enstatite and chrome diopside. Beside these minerals, diamonds weighing 0.12 and 0.08 carat has also been recovered.

The trace elements of this kimberlitic

Table 1.

	Bahradih		Kimberley blue ground*					
SiO ₂	40.69	46.83	38.29	32.03	30.32	38.08	36.57	35.49
Al ₂ O ₃	10.58	3.71	2.66	2.90	2.74	2.46	5.09	3.42
Fe ₂ O ₃	10.80	3.24	5.77	6.12	4.50	24.48	13.75	6.37
FeO**	—	4.35	2.93	3.40	4.09	2.59	4.68	3.02
TiO ₂	2.20	1.34	2.00	1.73	1.78	Nil	Nil	1.65
CaO	4.03	3.83	2.42	7.60	10.40	4.14	8.49	5.12
MgO	12.09	21.33	29.46	33.43	29.60	12.88	11.85	30.98
K ₂ O	0.60	0.70	1.03	1.34	0.75	0.84	0.64	2.61
Na ₂ O	0.60	0.63	0.30	0.35	0.45	1.12	2.55	0.20
P ₂ O ₅	0.46	0.74	1.44	1.45	1.34	0.67	0.58	0.63
CO ₂	—	—	0.20	2.50	6.21	1.67	4.61	3.03
H ₂ O ⁺	LOI ⁻	7.95	3.13	0.51	1.19	0.25	5.47	0.47
H ₂ O ⁻	17.10	5.22	10.19	6.31	6.56	10.14	6.31	6.69

*Washington, H. S., *Chemical analysis of Igneous Rock*, U.S. Geol. Survey, Paper 99. (Source: Sinar, K. P., 1930, pp. 149-150).

**FeO calculated as Fe₂O₃.

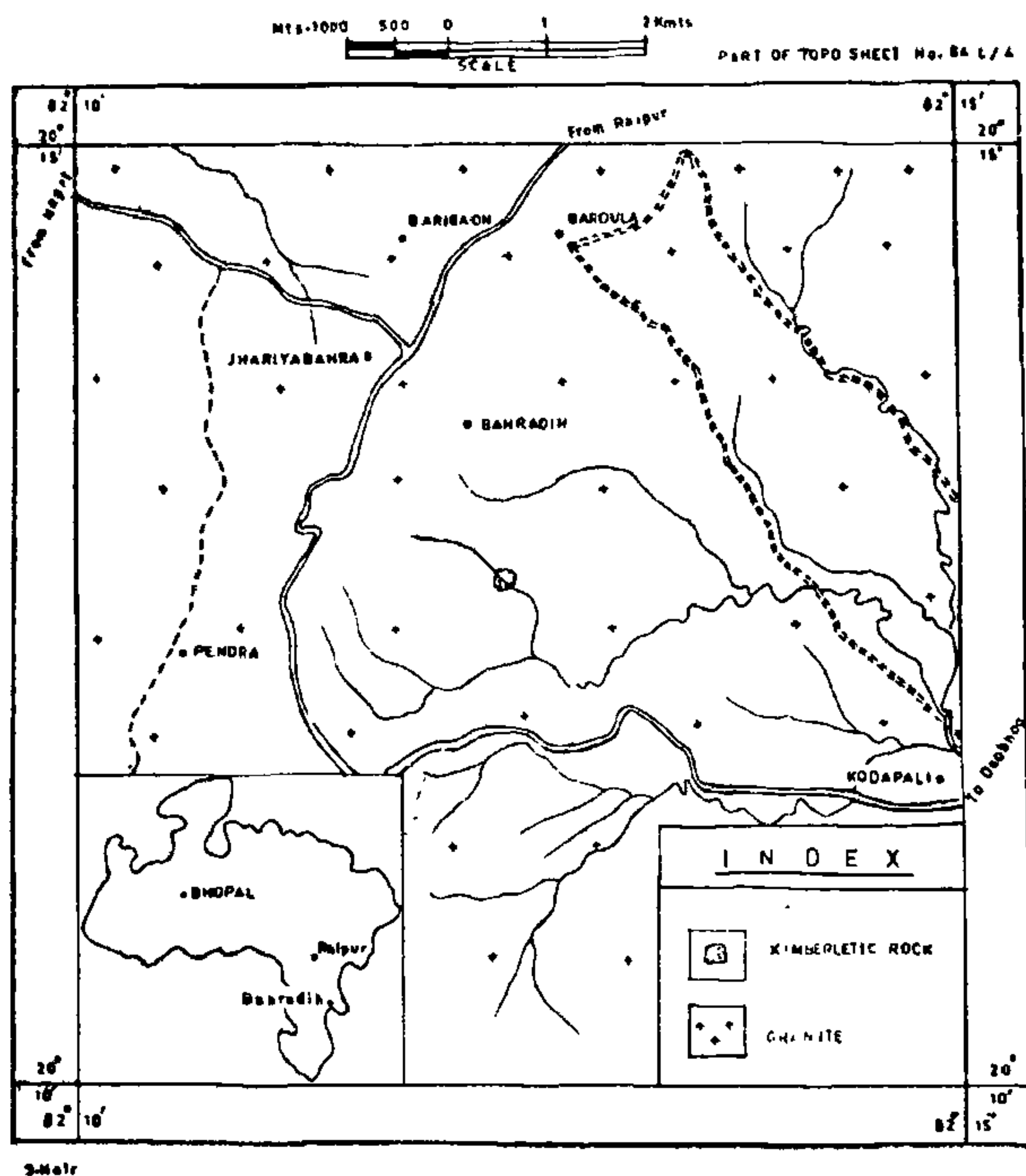


Figure 1. Geological map of the Bahradih area, Raipur district, MP.

similar to the analysis of Kimberley blue ground of South Africa, except the higher percentage of Al_2O_3 , which might be due to the granitic country rock.

The petromineralogical study, chemical analysis and presence of diamond in the rock provide sufficient evidences to support its kimberlitic affinity. The finding has provided positive avenues for further search of the diamond-bearing kimberlitic pipes in Maha Nadi graben area of Madhya Pradesh.

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weathered rock showed anomalous values of Cr, Co, Ni (Cr-900 ppm, Co-60 ppm, Ni-800 ppm). The chemical analysis of this rock is very much

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