Name and Situation

There forests of garhwa South Division lie mostly within the civil Sub-division of Garhwa and partly in chainpur P.S. of Daltonganj Civil Sadar Sub-division of Palamau District and are situated within the territorial unit of Chainpur, Bhandaria and Ranka Police Stations. The division stretches, between 23^0 34' to 24^0 05' North Latitude and 83^0 31' to 84^0 08' East longitude.

CONFIGURATION OF THE GROUND:-

Entire area of the Division is hilly and undulating . Southern and Western part of the Division is surrounded with precipitous and high hills. and the rest is plain to undulating the bulk of which falls to the western part viz. Khura, Masra, chapkali and Bilaitikhar along kanhar river where heavy erosion and wide gullies are noticeable. High are generally broken and rugged. The highest peak Gulgulpat strikes a height of 3819 ft. (1165 metre) above the M.S.L close to the border of surguja (M.P.)

Sl. No.	Name of the hill	Height above		Situation in
		Feet	Metre	
01	02	03	04	05
1.	Gulgulpat or Dhajaphar	3819	1165	Bhandaria
2.	Diyagarh	2998	913	-Do-
3.	Lohargara	2985	910	-Do-
4.	Semli Pahar	2784	847	-Do-
5.	Burha Pahar	2659	806	-Do-
6.	Daldali	2396	728	Ranka West
7.	Basu	2314	704	Ranka West
8.	Kari	2198	670	Ranka West
9.	Siroi	2033	620	Ranka West

GEOLOGY ROCK AND SOIL :-

Geological Notes relating to Garhwa Sub-division obtained from the Dy. Diractor General, geological survey of India Eastern Region, cal cutta Vide his letter No. 2711/2/ Bihar/En/6/85 dated 21.06.1988 is reproduced below :-

The litho units met with in the Sub-Division of Garhwa of Palamau district, Bihar, include chhotanagpur Granite gneiss compley, unclassified metasedimentaries vindhyans, Gondwana and lateritos, limestone, Basometal Graphite phosphorite and lateriate occur at different places in the Sub-Division.

The following succession is suggested in the Area :-

Plaistocane : Mahadeva formation : Red sandstone, red clay.

		Barkar formation	:	Silt & shale.
		Talchir formation	:	Boulder bed, Sand & Stone.
Vindhyan	:	Kheinjua lime stone	:	
Bijewars	:	Unclassified	:	Quartzite and Quartz
		Matasedimentaries.	:	schist, with tremolite schist, amphibolite and hornblende schist.
		Chhotanagpur granite	:	Granite gneiss
		gneiss complex.	:	porphyritic granite, hornblende biotite gnesis with enclaves of metamorphite.

The granite gneiss and associated migmatites are the most predominant rock types in the area. They are generally leucoccatic, well foliated and have area. They are generally leucoccatic, well foliated and have gneissose fabric.

They contain enclaves of schists, crystalline limestone and amphibolites. The porphyritic granites appear to be younger than the granite gneiss. Dykes of metadolerite pegmatite and quartz traverse these rocks.

Semingly younger to these rocks are the unclassified metasedimentaries which is supposed to be equivalent of Bijawars in the adiacent Mirzapur distt. of U.P. and is represented by quartzite and quartz schist mieaschist with treneolite schist and amphibolite and hornblende schist.

Unconformably overlying both the litno assemblages are the lower vindhyan rock which are represented by conglmomer ate, sandstone calcareous shale, porcellanite falspathic greywance and limestone. The general strike is **ENE-WSW** and in places the rocks are moderately folded.

The Gondwane is represented dominantly by its lower members and consists of boulder bed and sandstone. The boulder bed contains large boulders of arkosic sandstone and few small boulders of granite gneiss, set in a lisht, yellowish green, medium to fine granite matrix. Also boulders of limestone and hornblende schist are seen in it. The sandstone is oblive green in colour medium to coarse grained grading at times to siltstone Gondwana rocks strike **WNW-ESE** with a very gentle dip towards north.

In the extreme south laterite/laterite bausite occur S. Graphite occurs around Ranka Kalan, Phosphorite and Basemetal are reported from around singhitalli, Hendea and limestone from area around Bhawnathpur.

Bhawnathpur	**:**	**24^0 23’ 30” N: 83^0 35’ 00” E**
Ranka Kalan	**:**	**23^0 59’ 00 N: 83^0 47’ 30” E**
Sughitalli	**:**	**24^0 24’ 30” N: 83^0 33’ 30” E**

Geological Notes obtained from District Gazetter, Palamau District reference to Garhwa South Division are given below :

The Geological formations of the Palamau district Comprise mainly rocks of Archaean, Vindhyan and Gondwana ages, the last cut by dykes of Deccan trap age.

Geologically much or the district of Palamau is yet unexplored except the areas around Daltonganj, Bhawnathpur and Latehar, the coal field and other economic deposits such as theose of magnetite. limestone and clays etc.

ARCHAEAN ROCKS:-

i) At Sua, Datam, Chanado and Bhusari, on the outskirts of chainpur Range, three are deposits of **Crystalline Limestone** varying from clavstalline marble to termolite-marble, forsterite- marble and serpentine marble.

ii) The aphibolites are dark grey and black coloured rocks found in many parts of the Division. They are inclusions of older rocks in the gneiss as would appear from the abundance of small stringers of amphibolites in the granite, and the lit-part-lit injection of granite in the amphibolites near their margins which has produced composite-gneiss, and show beautiful ptygnatic folding.

iii) The delerites occur as dykes and banks and show various degress of metamorphism. They slightly metamorphosed dolerites are known as metadolerites.

iv) The gneisses and granites show a greater diversity. of texture than of mineral composition. The gneisses generally banded by the parallel orientation of the ferromagnesian minerals. Among the granites three varieties distinguished, which grade into each other, normal pink-cloured alkali granite characterized by pink potash feldspar in some places gneisses white coloured oligoclase granite; and porphyritic granite and augen gneiss with large lenticular porphyroblasts of potash feldspar. The granites are younger than the gneisses and show intrusive relation to the latter.

v) Two groups of magnetite are deposits are worth mentioning. Theses occur in Chainpur Range; There are five gore and the other near Biwabathan. There are five hillocks in the Gore hill area, four of which have beds of magnetite associated with a certain amount haematie on their top. The associated rock

is probably a mica peridolite but an orthosite has also been reported from the neighborhood.

THE VINDHYAN SYSTEM :- The lower Vindhayan System of rocks have been divided into the following stages :-

Rootas stage :- Consisting of limestones and shales.

Kheinjun stage :- Consisting of glauconite beds fawn limestone, and olive shales.

Porcellanite stage :- porcellanites etc.

Basal stage :- Kajrahat lime stone, Basal conglomerate etc.

THE GONDWANA SYSTEM :- Coal bearing Damuda Strata occur in Hutar on the the border of chainpur Range . The distribution suggests that they are remnants of a much larger spread of Gondwana strate, and indeed were probably the westward extension of the Gondwanas of the Damodar Valley. Coal deposits are noticeable in Binda within Bhandaria Range which is now under.

The small plateaus know as “pats” in the southern part of Garhwa South Division near the boundary with surguja (M.P.), are capped by thick masses of laterite and bauxite. It is believed that part of the laterrite is formed from the lateration of the Daccan Lavas which reached their eastern limit in this region.

The important mineral deposits met with in Garhwa South Division are given below:-

BAUXITE: - An ore of aluminum containing high perentage of alumina with some titanium oxide, a little silica, ferriobydroxide and other impurities, occurs in the southern part of Garhwa South Division.

MAGNETITE: - Associated with tremolite schists occurs in Datam, Gore in Chainpur Range of Garhwa South Division.

CRYSTALLINE :- “Dolomite” and “dolomitic limestone” occur in Datam, Nawadih of Garhwa South Division.

Deposits of “graphite” are known at “Sokra” in Chainpur Range of Garhwa South Division. Graphite is either amorphous or flaky and occurs in thin veins traversing the graphite schists.

The formation and availability of the various ores in Garhwa South is shown on the annexed map obtained from the Indian Bureau of Mines, Ranchi (Map No. 1)

“MINERAL WATER”:- In the forms of hot springs exist near Hutar on the broder of Chainpur Range in Garhwa South Division. It has therapeutic properties in curing reheumatism, gout, skin diseases and digestive disorders.

SOIL :- The soil derived from various geological formation and in the valleys of important river system is very variable. It is laterite clay or clayey loam on the plateau formations and hill slopes on the south and in patches of central portion of Garhwa South Division characterized by pure sal crop. Elsewhere shallow loam mixed with quartz pebbles and sand or coarse sandy loam origination from quartzite or gneiss or granitic gneiss where miscellaneous crop with salai and bamboo are noticeable. The alluvial soil is limited to the flat valleys of the koel, Kanhar, Table, danro where Khair is met with as in Chakhar bonga in Chainpur Range.