REPORT ON FIELD VISIT

Place visited	Bagalkot, Karnataka, India
Date and time	08/03/22 – 12/03/22
Department/School/Directorate/ Section	Applied Geology; School of Earth Ocean and Atmospheric Sciences (SEOAS), Goa University
Participants (Total)	31
Faculty attended	02
Students attended	29
The objectives / description of the activity (50 words)	The main objective of this course is to give students the hands-on experience in the field so as to understand the lithology, structure and their place in Stratigraphy besides getting a thorough knowledge of field mapping which will make them accomplished field geologists
Photos	attached
Benefit/Key outcome of the event in terms of learning/skills/knowledge	The students be able to identify the rocks their structures, and prepare geological map and write a detail technical report of the area.

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ABSTRACT

The Report focuses about the geological study area of the Field Trip at Bagalkot, Karnataka. The Bagalkot District lies in the north-Central part of the Karnataka. The District is surrounded by the Belgaum district to the west, Bijapur district and Kalaburagi district to the nrth and north east, Raichur district to the east and koppal district, Gadag district and Dharwar district to the south-east, south and south-west respectively. The Bhagalkot District covers an area around 6593 Km^2 and at the approximate elevation of 524m. It is densely populated and most of the land is under cultivation.

This region experiences tropical monsoon type climate, during summer season with the extreme hot and a wider period for the monsoon. It has hot and dry climatic condition.

Eastward draining perennial rivers and their tributaries drain this region. River Krishna flows along the northern boundary of this basin. Ghatprabha and Malprabha are its right bank tributaries, which drain the Kaladgi Basin. In addition, the upper reaches of the left bank tributaries of the river Tungabhadra have their sources in the southwestern parts of this region.

The work carried out was sampling the rock, measuring attitude and trend of the outcrops. All these observations were carried out to establish stratigraphic sequence of the field area, to deduce the geological history of the area, to recognise deformational structures and to classify the rocks present in the area.

CONTENT

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INTRODUCTION

Karnataka forming a part of the Indian Shield is constituted of rock formations ranging in age from 3300 m.y. to 5 m.y. The state forms the west central part of Peninsular India between North Latitudes 11 35'30" and 18 25'30" and East Longitudes 74 06'00" and 78 35'30". It occupies an area of 1, 91,792 sq.km of which 1, 86,792 sq.km are covered by hard rocks consisting of crystalline and older sedimentary and a narrow coastal strip of about 5,000 sq.km of Tertiary and Quaternary sediments.

Barring a narrow coastal strip of about 5000 sq.km of Tertiary and Quaternary sediments and another 31,250 sq.km of Deccan basalts, the remaining area is dominated by Archaean-Proterozoic rocks. Mysore Plateau, geologically constituted of Dharwar Craton comprises of greenstone-granite belts, gneisses and granulites.

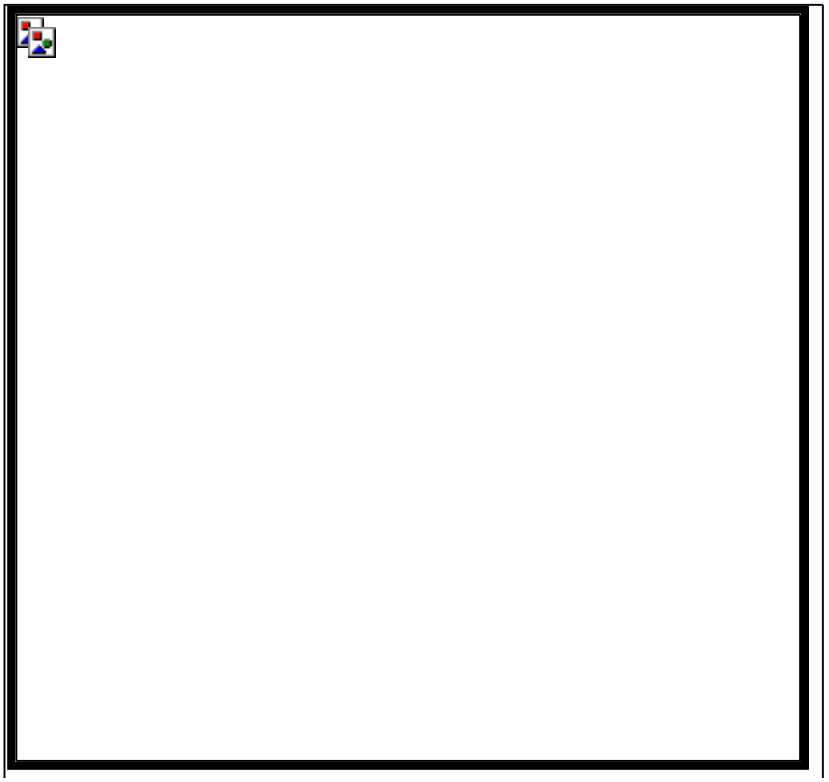

Fig.1 – Geological Map of Karnataka (http://geokarnataka.blogspot.com/2010/01/geological-map-of-karnataka.html)

Greenstone belts essentially consist of meta-volcano sedimentary sequences, surrounded and dissected by Peninsular Gneiss. At the southern end of the craton these give way to granulite suite of rocks. The craton preserves a billion year orogenic history from 3400 m.a. to 2400 m.a.

Epicratonic or intracratonic sedimentary basins called Purana Basins occupy the northern segment of the craton whose northern part in turn is concealed by Deccan basalts. Thus younging of litho sequence from south to north is evident in this region.

REGIONAL GEOLOGY

The Kaladgi basin is located on the northern fringes of the Dharwar Craton of south India. The Kaladgi basin is exposed between the longitudes73°E and 76°E and the latitudes of 15°30 N to 17° N. The contiguous exposures of these sediments, occurring in parts of the Belgaum, Bijapur and Bagalkot districts of Karnataka.

It is comparable to other Proterozoic 'Purana Basins' of Peninsular India in its shallow marine, peri-cratonic sedimentary sequences. The kaladgi succession is >4500 mts resting on the Archean basement and covered by the Deccan traps. The basin is divided into the lower Bagalkot, belongs to meso-ptroterozoic and the upper Badami, which is Neoproterozoic in age. The two are separated by the angular unconformity. The Deccan Trap basaltic lava flows of Late Cretaceous–Early Paleocene age cover them across this region.

Kaladgi is the only Purana Basin that displays stronger deformation in its central parts than along the fringes. This deformation is restricted to the sedimentary succession of the Mesoproterozoic Bagalkot Group and is not observed in the younger Badami Group.

The basement for the Kaladgi sediments consists of crystalline and schistose rocks of Archean to Early Paleoproterozoic age. They are a typical cratonic assemblage comprising of granites and associated intrusive and the younger basic dykes intruding into multiple phases of greenstone belts and granitic gneisses. The Peninsular Gneisses are composed of tonalitic–trodndhjemitic–granodioritic (TTG) gneisses.

The NNW-SSE trending Shimoga Schist belt is present to southwest of the basin (south of Belgaum), and its equivalents are recognised from the coastal belt around Malwan. This belt is composed of gneisses, conglomerates, phyllites and banded iron formations (ferruginous chert and quartzite). The NW–SE trending Hundgund–Kushtagi Schist Belt is a ~100 km long and

20 km wide belt that forms the basement in the eastern parts of the Kaladgi Basin, around Bagalkot. This tightly folded sequence of banded iron-quartzites, pelitic metasediments, interbedded basalts and minor ultramafics display multiple generations of folding .The folding and metamorphism of the Hundgund-Kushtagi schist belt is of Neoarchean age since it preceded the Neoarchean granitic intrusions.

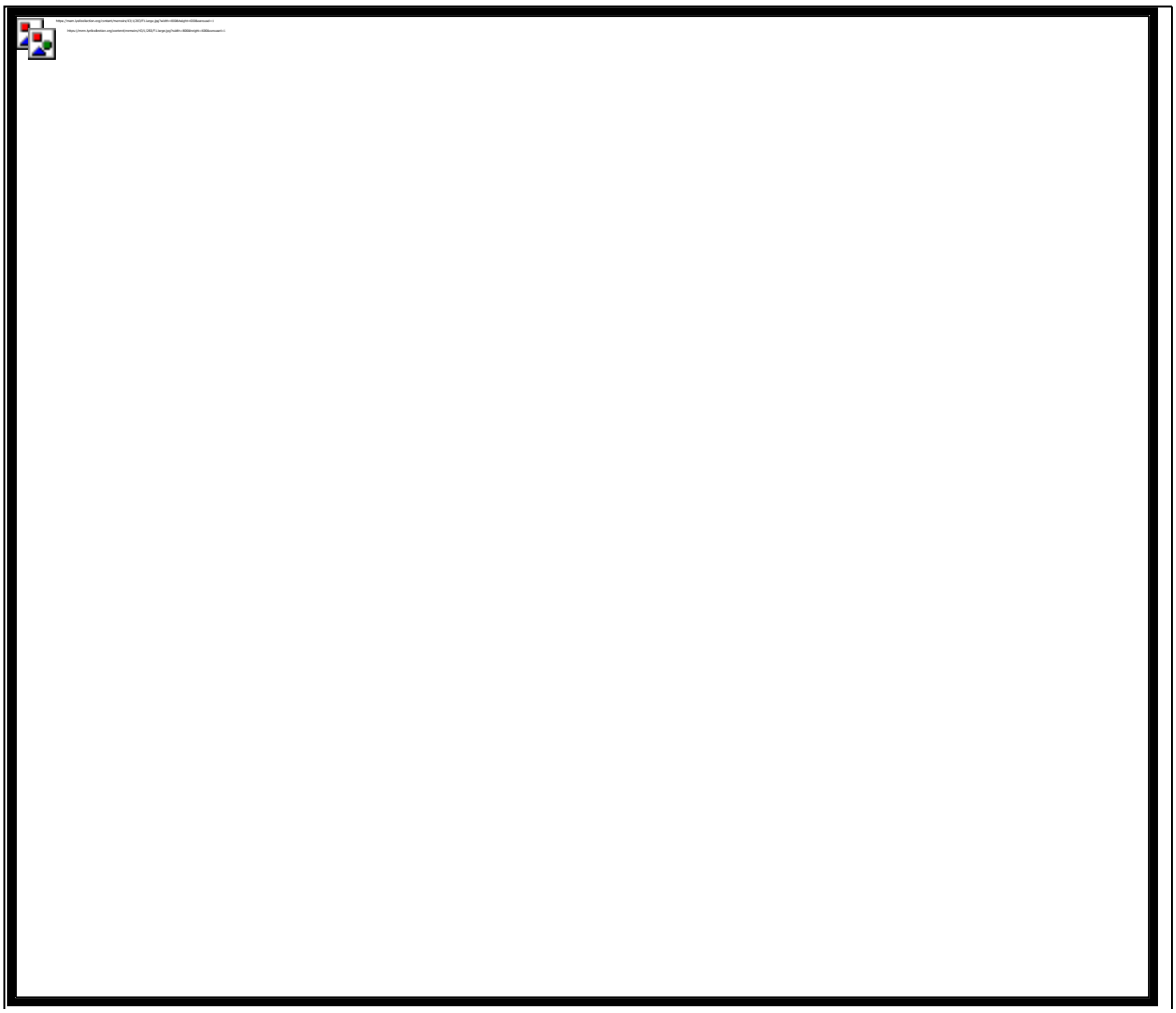

Fig. 2 - Geological map of the Kaladgi–Badami Basin (modified after Jayaprakash *et al.* 1987)

In the Bagalkot group the quartzitic sandstones and arkose at the base grade upwards into purple and brown argillites of the upper lokapur sucession. Overlying this are the cherty Stromatolitic dolomites. This are associated with siliceous ferrugeneous argillites which are shallow water deposits. Continued movement on faults generated chert breccia in the basal part

of the formation .Limestones, dolomites and shales were deposited subsequently. Break in sedimentation is marked by a discomformable conglomerate. The overlying Simikeri succession consist of quartzite, chert breccia, ferruginous shale and dolomites. Towards the close of the bagalkot times pegmatite and quartz veins intruded the sediments.

Fig 3- Geological Map of the Bagalkot District

Fig 4 – Location Map of the Field Trip Sites

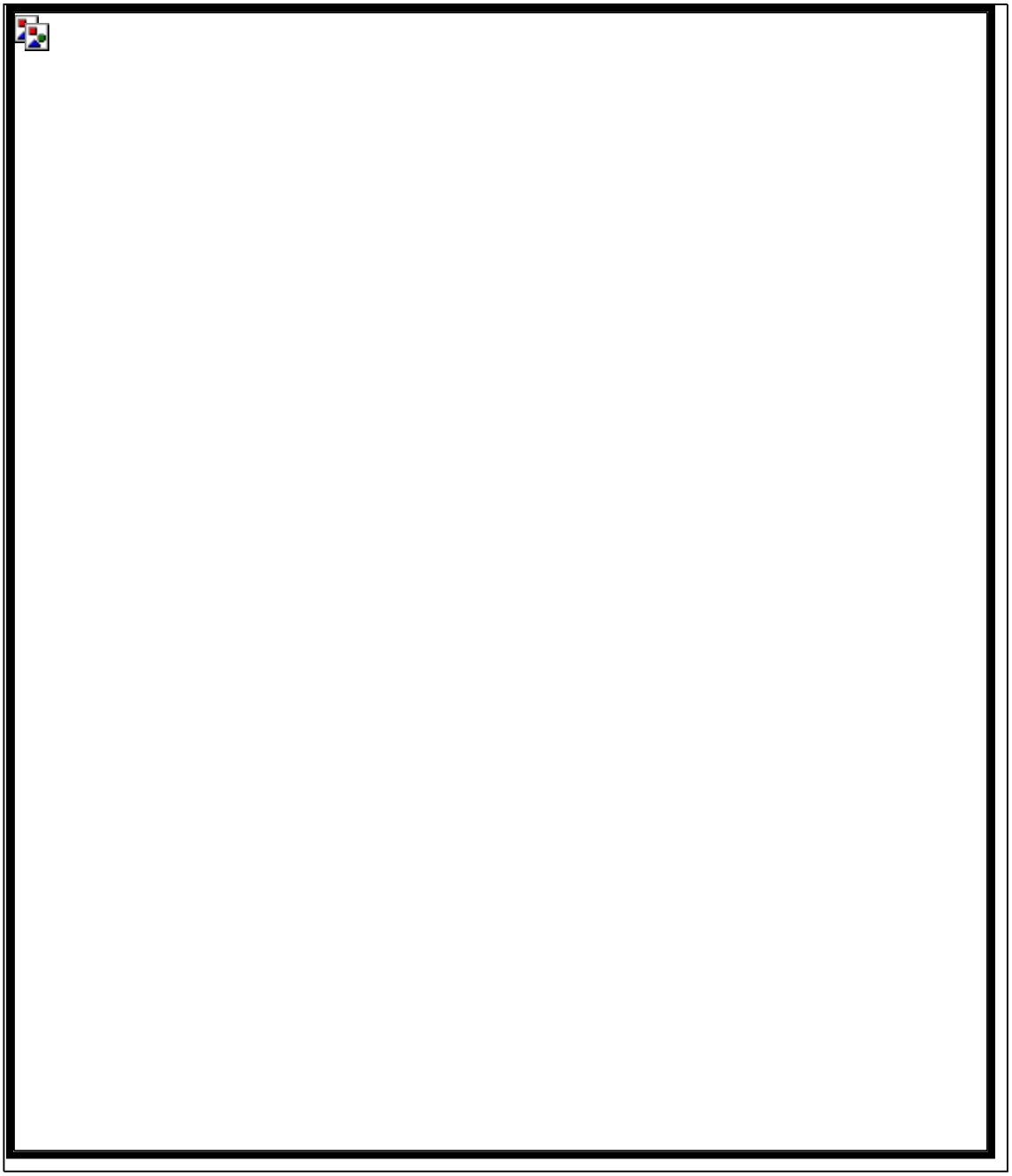

Fig 5- Lithostratigraphy of the kaladgi Badami Basin

DAY 1- 8/03/2022

1.1) Site location – Karadiguddi

Geographical distribution–Latitude: $15^0$52’55.362”N Longitude: $74^0$41’40.7112”E

The rock beds are exposed over a hill with a moderate slope and are extensively physically weathered. The rocks at the base are texturally clastic with the spherical grain morphology and compositionally constituting with the minerals quartz and jasper. The rock is identified as a **Bevinmatti conglomerate**. Bevinmatti conglomerate marks the disconformity between the Lokapur Subgroup and the Simikeri subgroup of the Bagalkot Group of the kaladgi formation.

It is observed that the size of the clast of the conglomerate increases as one traverse from down to up of the slope and also the grade from clast supported to the matrix supported increases towards upwards. Conglomerate exhibiting graded bedding structure (Fig.)

At the upper part of the slope, Bevinmatti conglomerate is grading into the **Muchkundi Quartzite** of Kundargi Formation of the Simikeri Subgroup.

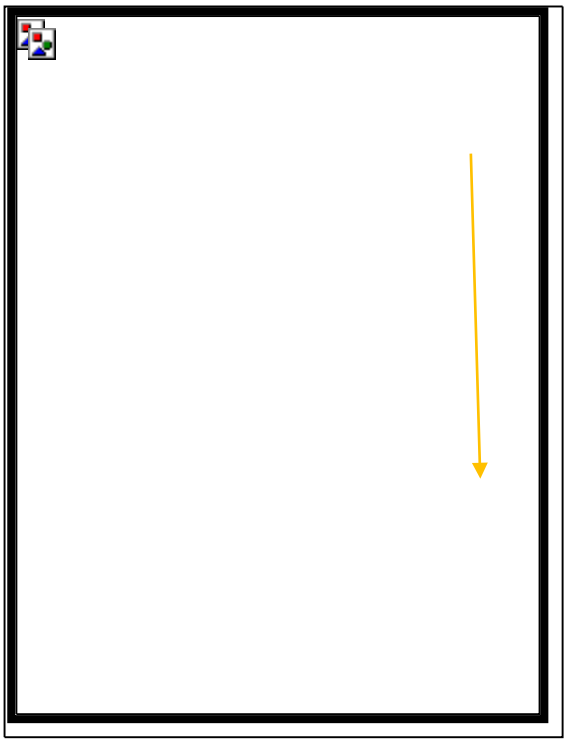

Fig.6- Graded Bedding in the quartzite

1.2) Site Location- Karadiguddi

Geographical distribution – Latitude: $15^0$52’37.6”N Longitude: $74^0$41’48.9”E

The rocks at the exposed site have undergone through spheroidal type of weathering and exhibits exfoliation. These rocks are igneous rocks which are texturally fine grain, equigranular, holocrystalline and structurally vesicular but very small amount of the vesicles are filled by the secondary mineral zeolites and shows Amygdaloidal structure. Colour index is Melanocratic. The rock is classified as mafic volcanic igneous rock and named as **Basalts**. These Basaltic lava flows usually known as the Deccan traps of Sahyadri group of cretaceous-Eocene age. (Kale, 2020). At this site the Basalts are surrounded by the older rock beds i.e. Deccan traps are being surrounded by the kaladgi basin forming the outlier structure.

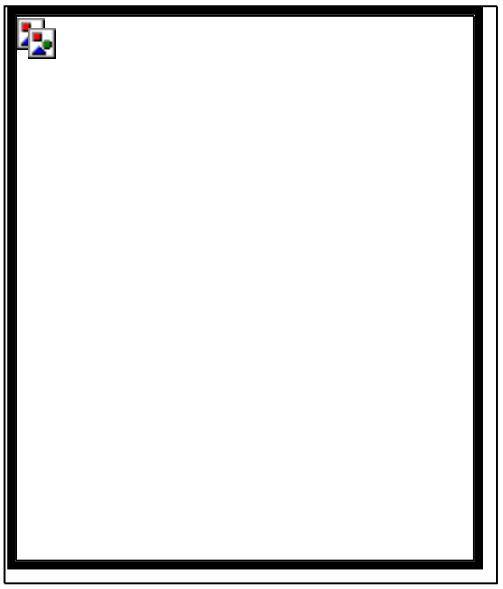

Fig.7 - Spheroidal weathering in the Deccan Traps

Fig.8 – Vesicles in the Deccan Traps

DAY 2 (9/03/2022)

2.1) Site Location- Ramthal

Geographical distribution – Latitude: $15^0$52’37.6”N Longitude: $74^0$41’48.9”E

The rocks are exposed over a hill with the moderate slope and has been physically weathered. Rocks are texturally banded with the light and dark coloured bands. Minerallogically dark coloured bands are of hematite and the light coloured bands are of quarzitic (crystalloblastic) and of jasper. These are **Banded hematite Quartzite and Banded Hematite Jasper**. These BHQ and BHJ are highly folded and highly metamorphosed and belongs to the NW–SE trending Hundgund–Kushtagi schist belt. They forms the part of the basement rock of the kaladgi basin.

Two Sets of the fractures are seen in the rock, Fracture F1 trending in N135^0 and Fracture F2 tending in N195^0.

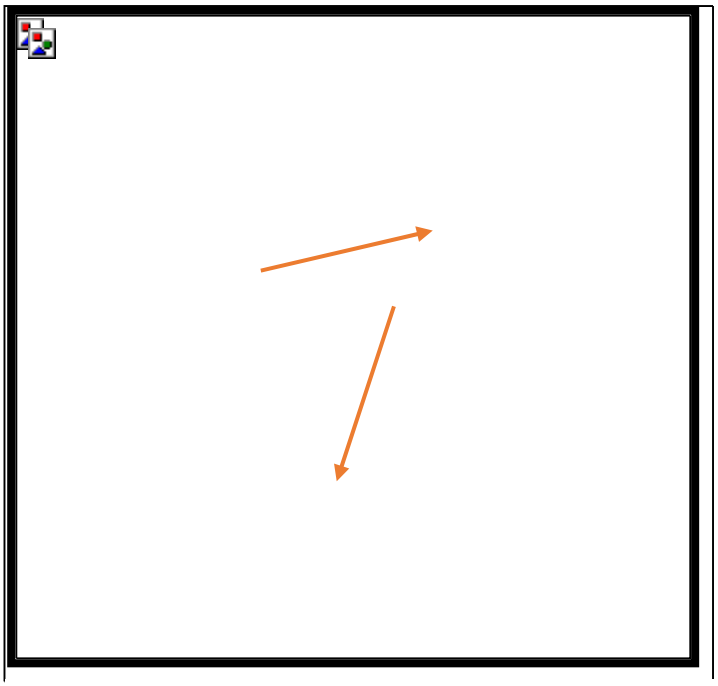

Fig.9 – Fracturing into the Quartzite

2.2) Site Location- Ramthal

Geographical distribution – Latitude: $16^0$05’13.7”N Longitude: $75^0$52’21.7”E

This site is situated on the banks of the river Malaprabha .At the base of the hill at the one end the rocks exposed are the fine grade Metapelites which are striking $N210^0$ and Dipping towards $N310^0$ by 34^0 and at the other end the Fine grade metapelites that are texturally foliated with the slaty cleavage structure. They strike $N5^0$ and dip towards N 95^0 by 70^0.These fine grade metapelites belongs to the NW–SE trending Hundgund–Kushtagi schist belt. There is a fold into the metapelite , It is a Plunging fold with the right limb dipping by 13^0 and left limb dipping by 40^0 and the axial plane trending in $N330^0$ by 64^0, it is classified as the steeply inclined fold.

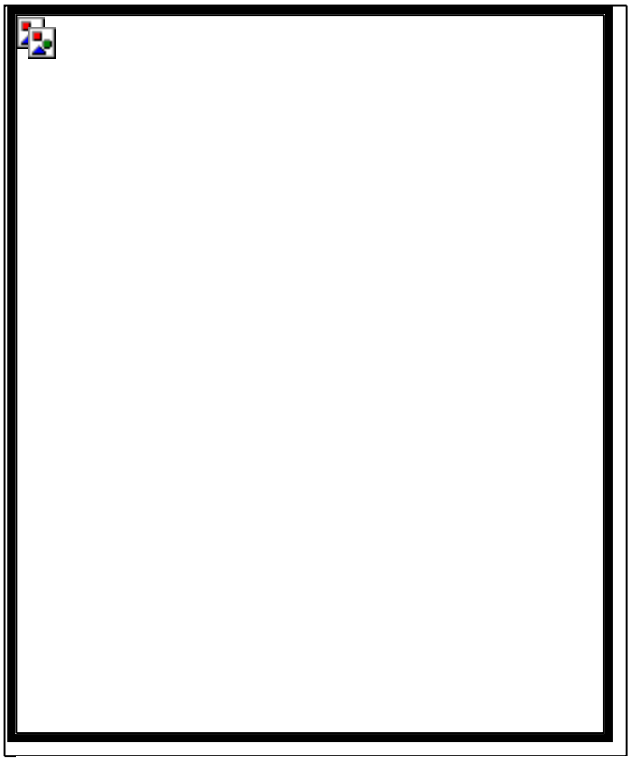

Fig. 10 - Fold in the Metapelites

As we traverse upwards we encounter folded BHQ’s that shows class 1C fold with the thickness of the hinge is more than the thickness of the limbs. The right limb of the fold dipping by 60^0 and the left limb of the fold dipping by 45^0 with the axial plane trending in N 326^0 by 54^0. The fold is classified as the moderately inclined fold.

Fig.11- Moderately inclined fold in the BHQ

At the middle of the hillock the exposed rock is composed of sub-rounded to sub-angular clast. These are **Salgundi Conglomerates**. These Salgundi conglomerate forms the basement for the Kaladgi Supergroup. Traversing upwards the lenses of the conglomerates are seen into the quartzites this could be due to the episodes of higher velocity movement of water, At the higher altitudes the Salgundi conglomerate is grading into the rocks which are texturally granoblastic which strikes $N270^0$ and dip towards $N360^0$ by 27^0 .This are the **Saundatti Quartzites** of the Ramdurg Formation of the Lokapur Subgroup, Bagalkot Group.

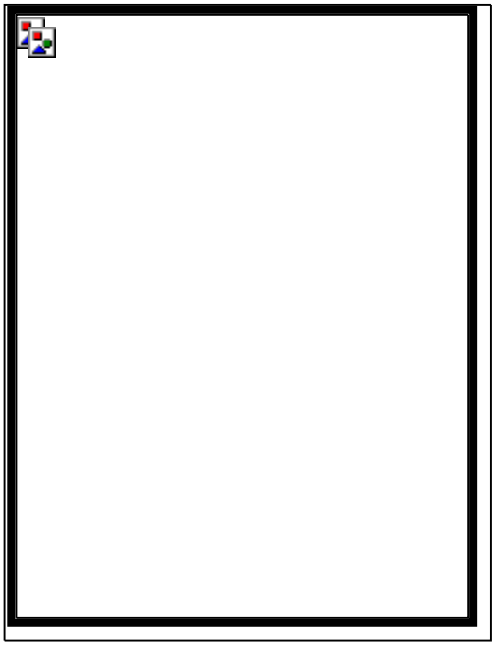

Fig.12 – Lenses of Salgundi conglomerate into the Saundatti quartzites

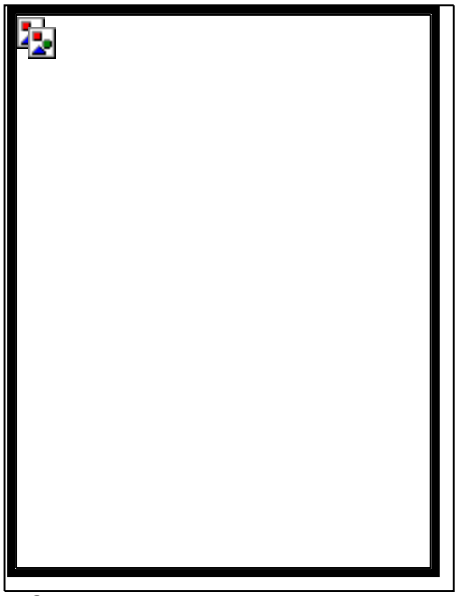

Fig.13- Grading of Salgundi Conglomerate into the Saundatti Quartzite.

2.3) Site Location- Ramthal

Geographical distribution – Latitude: $16^0$05’15.2”N Longitude: $75^0$52’27.8”E

The rock is fine grain sedimentary rock. The rock is **Manoli Argillite** of the Ramdurg Formation. This Manoli Argilletes are younger than the Saundatti quartzites.

Mineral **Goethite** has mineralised into the botryoidal structure into the quartzite.

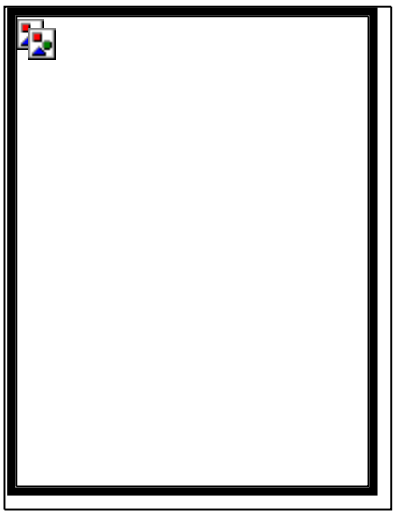

Fig.14 – Manoli Argillites

Fig.15- Contact between Manoli Argillites and Saundatti Quartzites

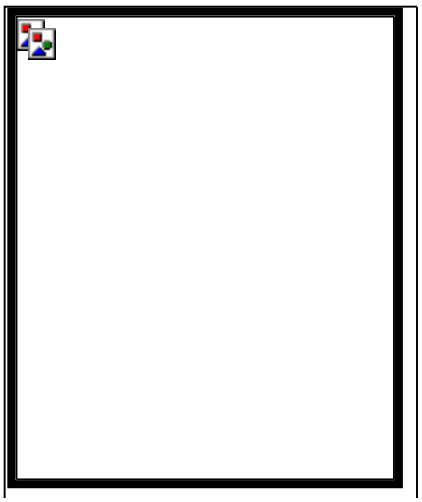

Fig.16- botryoidal mineralisation of Goethite

<u>From the Ramdurg Site it is inferred that BHQ ,BHJ and the metapelites of the hungund schist belt froms the basement of the kaladgi basin this were followed by the Salgundi Conglomerate , Saundatti quartzites and the Manoli Argillites.</u>

2.4) Site Location- Ramthal

Geographical distribution – Latitude: $16^0$00’51.4”N Longitude: $75^0$53’05.4”E

The exposed rock is a sedimentary rock that is a hardened natural cement of calcium carbonate that has binded other minerals such as quartz and pebble. This is a **Caliche** and this unconsolidated rock is due to the leaching of the overlying rocks.

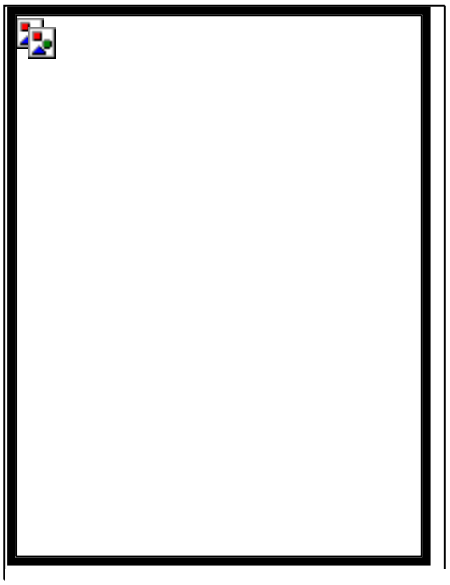

Fig.17- Caliche

2.5) Spot Location- Aihole

Geographical distribution –Latitude:16^{0}00’51.4”N Longitude: 75^{0}53’05.4”E

On the left side of the highway, the rock exposed is the sandstone with the coarser grained size sand that strikes N110^0, Dip towards N205^0 by 35^0. Secondary oriented quartz venlets are seen in the rocks which is less than 1 cm. These rock belongs to the Hoskatti formation of the Simikeri subgroup. Then after the encountered rocks are sub angular sub rounded breccia, its source rock can be closer to the vicinity.

On the right side of the highway the exposed rock is the sandstone with fine grain sized sand that strikes N90^0 and dip towards N180^0 by 3^0. This are the Sandstones of the Keru Formation of the Badami Group. This sandstone contains more matrix ratio as compared to the sandstones of the Simikeri subgroup.

It is inferred that the Simikeri subgroup of the Bagalkot group is separated from the Badami group by an angular unconformity. Badami group has remained nearly horizontal and has not undergone any episode of deformation.

Fig.18- Sandstone of the Keru Formation

Day 3 (10/03/2022)

3.1) Site Location- Kagal Komb

Geographical distribution – Latitude: $16^0$6’52.956”N Longitude: $75^0$38’22.776”E

This area is covered with huge veins which shows concohoidal fracturing, vitreous lustre and with No cleavage. These are white Quartz veins that trending in $N95^0$ .There are some prominent fracturing into the veins with fracture trend $N135^0$. The quartz vein has undergone extensive mechanical weathering.

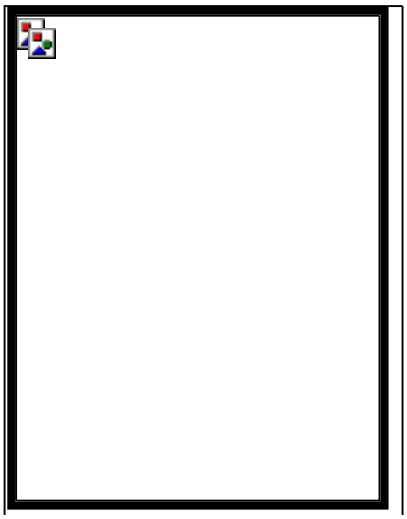

Fig.19- Highly Fractured Quartz

3.1.1) These beds of the rock are extensively weathered, beds are striking in $N100^0$ and dip towards $N190^0$ by 50^0. On the reaction with the HCL the rock released effervesces but the effervescences were not that prominent which concludes that the rock is Dolomite from the Bagalkot Group.

Fig 20 – Highly Weathered Dolomite

3.2) Spot Location- Kagal Komb

Geographical distribution –Latitude:16^{0}3’18.7452”N Longitude: 75^{0}38’45.1644”E

The exposed rock shows foliation and is composed of very grain minerals. The bedrock strikes N86^0 and dip towards N180^0 by 6^0. Over the testing the rock with the HCL gives out higher effervescence. It is the **Kokankoppa Limestone** of the Katageri Formation

Since the bedrock is nearly horizontal it is the part of the Badami Group of rocks.

3.3) Site Location- Kagal Komb

Geographical distribution –Latitude:16^{0}01’15”N Longitude: 75^{0}38’60”E

The bedrock is Striking N 210^0 and dip towards N300^0 by 3^0 and it is the fine grain argillaceous rock. The rock is identified as a **Halkurki Shale** of the Katageri Formation Shale shows the slaty cleavage structure. The shale shows Warping texture with red and white coloured layers. The red layer could be ferruginous and with siliceous white layer.

3.4) Spot Location – Badami

Geographical distribution – Latitude: 15^{0}56’18.3”N Longitude: 75^{0}40’35.3”E

The rock is Arenaceous with the framework of sand. It is composed of fine sized sand grains with the ferruginous and siliceous matrix. These are the huge exposure of the **Cave Temple Arenites**. This could be the result of sinking of the sandstone basin and the continuous deposition of the sandstone beds.

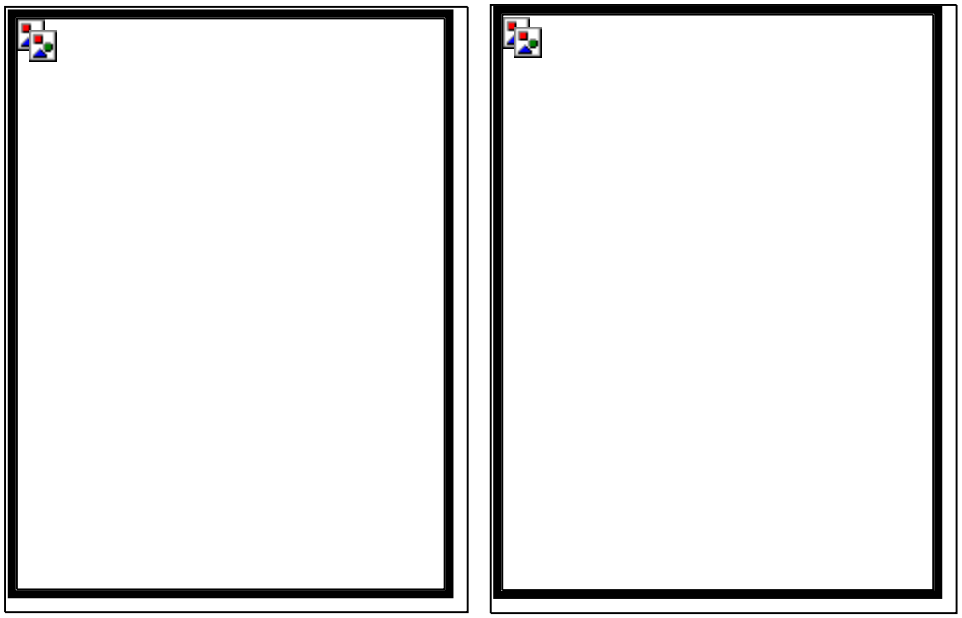

Fig 21- High exposures of the Temple Cave Arenites

Day 4 (11/03/2022)

4.1) Site Location- Bilgi

Geographical distribution – Latitude: $16^0$20’25.674”N Longitude: $75^0$36’41.88”E

The exposed rock is igneous rock that is texturally coarse grain, Pheneritic, holocrystalline and shows Leucocratic Colour index. It is Minerallogically composed of Quartz and hornblende. The rock is classified as Plutonic Igneous Rock and the rock Name is **Granite.** Granite rock as the country rock and as can be seen from fig (22) Pegmatite Dyke is cutting across the country rock which trends in around $N60^0$ with the average thickness 18-26 cm. Dyke is very coarse in grain size and composed of essentially Orthoclase feldspar and the quartz. Two Sets of joints are seen in the country rock, with J1 joint trending in N 170^0 and J2 joint trending in N 260^0.
The Granite encloses numerous xenoliths that are igneous rock with Melanocratic Colour Index and fine grain, holocrystalline texture. They are classified as Mafic Igneous rock and it could be the rock Basalt.

This Country rock Granites could be the part of the Closepet Granites of the Dharwar Craton with age 2500-2600 Ma. The country rock in most of the parts is exfoliated.

From this Area it could be inferred that Country rock Granites were first to intrude then after there was intrusion of the Pegmatic Dyke followed by the jointing of the Joint J2 and then the Joint J1.

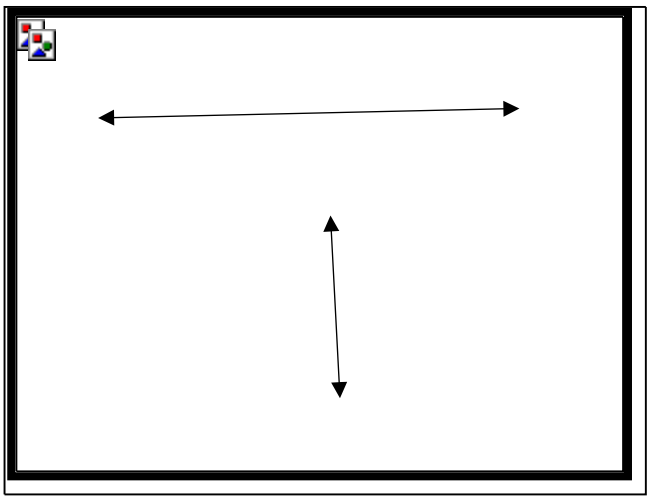

Fig.22- joint sets J1 & J2 into the granites

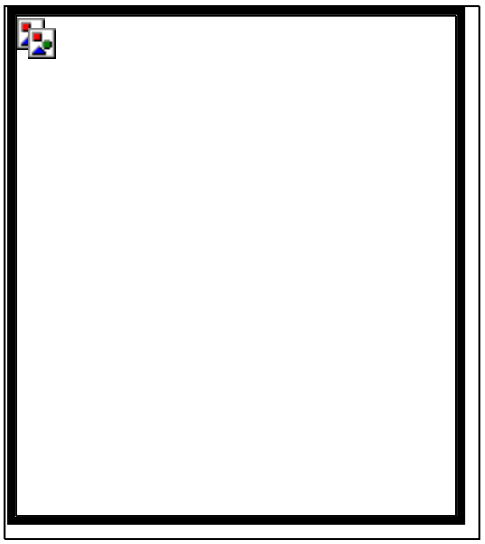

Fig.23- Intrusion of Pegmatite into the Country Rock

4.1.1) In this area at the down region of the hill, the encountered rock is the conglomerate with clast of the quartz. It is the Matrix supported conglomerate and the matrix is siliceous. The presence of majority of the quartz as a clasts in the conglomerate due its vicinity the huge granitic intrusion that is essentially composed of Quartz. At the middle region of the slope that the exposed rock is the Quartzite and the entire site shows graded bedding structure. From Fig.() cross bedding structure is also seen into the quartzites.

Fig.24- Cross Bedding into the quartzites

4.2) Site Location- Bilgi

Geographical distribution – Latitude: $16^0$20’13.7”N Longitude: $75^0$36’42.9”E

The rock in this area is exposed in the huge beds. This is metamorphic granoblastic rock. The beds strikes $N85^0$ and dip towards $N177^0$ by $10^{0.}$ The rock is identified as **Saundatti Quartzite** of the Ramdurg Formation. This Quartzite is reddish in colour due to the presence of hematite in it. Even though this rock is metamorphosed the sedimentary bedding is still preserved.

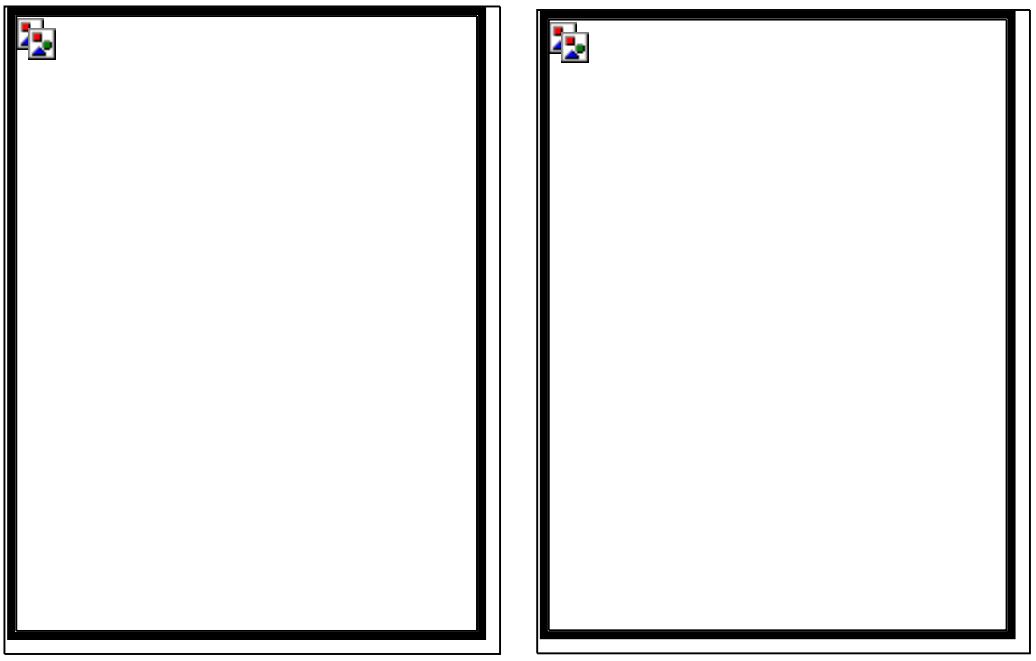

Fig 25- Relict Bedding into the Saundatti Quartzite

4.3) Site Location- Bilgi

Geographical distribution – Latitude: $16^0$20’30.984”N Longitude: $75^0$36’58.33”E

The exposed rock is the fine grain unconsolidated. It is the chemically weathered product of the granite constituting the some grains of the mineral quartz and feldspar. At some parts of the bed the Reaction with HCL shows effervescence depicts the patches of Ca concentration in the rock.

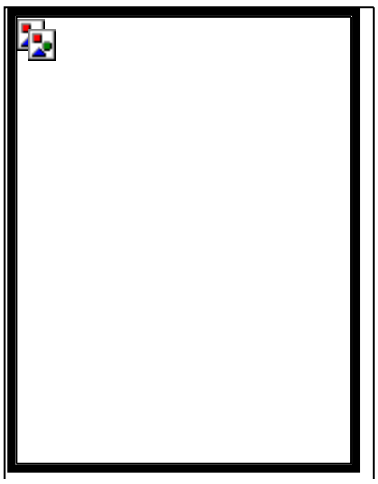

Fig.26- Weathering Product of the Granite

4.4) Site Location- Lokapur

Geographical distribution – Latitude: $16^0$10’38.1”N Longitude: $75^0$21’38.2”E

The rock shows high effervescence over reacting with HCL. These are the Stromatolitic limestone that are the result of the biogenic activity and the chemical precipitation. These are found on the shallow marine basin. The sinusoidal pattern is formed because of the depositional feature and these are the biostratigraphic indicators. This is the Chiksellikere Limestone from Yendigeri formation of the Lokapur subgroup.

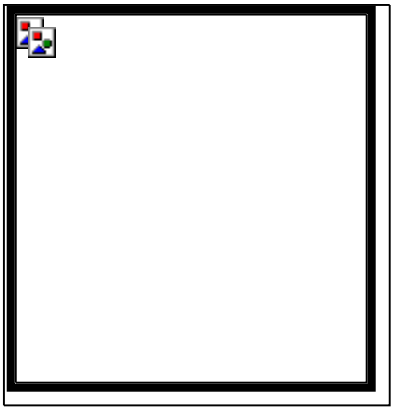

Fig.27- Limestone with Stromatolitic Structure

Day 5 (12/03/2022)

5.1) Spot Location- Shirur

Geographical distribution – Latitude: $16^0$05’31.8”N Longitude: $75^0$47’01.6”E

This is a moderately inclined hillock. At the base of the hill the exposed rocks are the clast arenaceous rock that is Sandstone which is majority composed of the clast of the coarse grain sized sand and the ferruginous matrix. The sandstone is well rounded and well sorted. The sandstone Strikes 2N195^0 and dip towards N285^0 by 4^0.

There are two prominent joint sets observed in the sandstones, the joint J1 trending in the direction N235^0 and the joint J2 trending in the direction N330^0. It is the observed that the joint sets are perpendicular to each other.

From Fig (28) the fault trace is been marked by the slickensides. It is the normal fault where the hanging wall has moved downward with respect to the foot wall.

As the traverse along the hill, it is observed that the grains of the sandstones are fused and turned into a Quartzite i.e Saundatti quartzite.

At the upper part of the hill it observed that the clast in the rocks are angular to sub-angular and Rudaceous in size cemented by the ferruginous matrix. These are the **Mahakut Chert Breccia.** This are high chert movement transitional breccia. The clast vary in lustre with the concohoidal fracture.

Fig .29 is the entire fault zone in the area that has resulted into the angular breaking of the rock that has given rise to the Breccia.

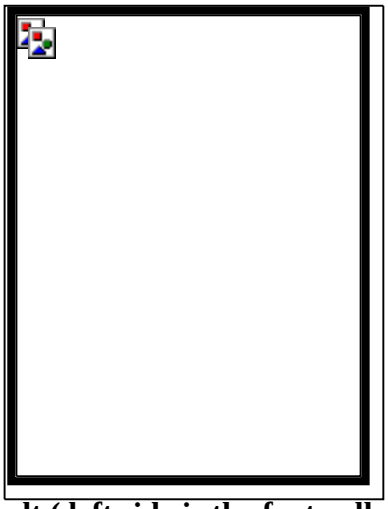

Fig 28-Normal Fault (left side is the footwall of the fault and the left side is the hanging wall that has moved downward)

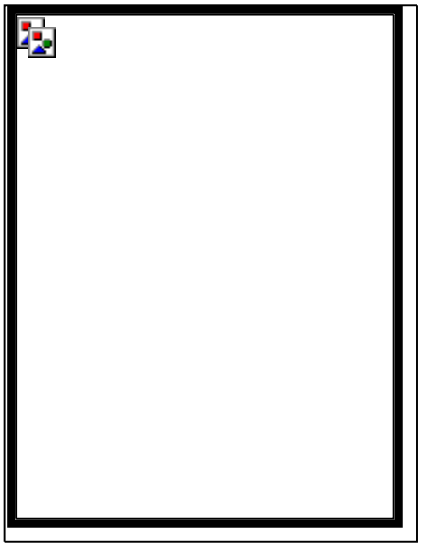

Fig.29- Fault Zone

Fig.30- Cross Bedding into the Saundatti Quartzite

5.2) Spot Location- Shirur

Geographical distribution – Latitude: $16^0$05’48.8”N Longitude: $75^0$48’08.2”E

The exposed rocks are the Quartzites. These with ferruginous matrix. This quartzites shows the structure of the gash veins this Gash veins are basically a vein resulting from the filling or it’s a mineralised fissure. The mineral quartz is crystallized into the gash veins. The trend of the gash veins are around $N45^0$.

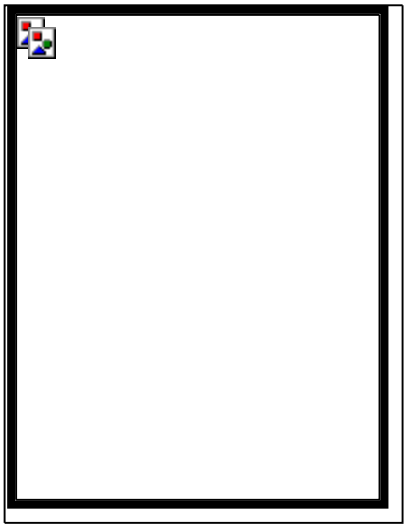

Fig 31- Gash Vein into the Quartzites

5.3) Site Location – Budanagad

Geographical distribution – Latitude: $16^0$05’10.244”N Longitude: $75^0$48’47.33”E

The rocks are fine grain, holocrystalline with the melanocratic colour index. This are classified as mafic volcanic igneous rocks and the rock is basalt of the **Deccaan traps**. Then the rock encountered was the Plutonic felsic igneous rock with the essential minerals of the orthoclase feldspar identified as the **Pink Granite**.

5.4) Site Location – Hanapur

Geographical distribution – Latitude: $16^0$02’04.2”N Longitude: $75^0$45’30.9”E

These are coarse grain sized sandstones and have undergone through partial metamorphism and has turned partially into the quartzites. These quartzites are slightly greenish in colour, the green colour could be transition of Cr while sandstone into the quartzites. These quartzites belongs to the Badami Group of Rocks.

5.5) Site Location – kelawadi

Geographical distribution – Latitude: $16^0$04’33.042”N Longitude: $75^0$42’7.426”E

The rock exposed is the Metapelite that contains some concentration of the calcareous mineral at some spots which reacts with HCl to gives effervescence. There is a semi-brittle kind of the fold in the exposed beds, the axial plane of the trough is $N15^0$ and the axial plane of the crest is $N65^0$. In the trough the dip amount of the right and left limb is 80^0.In the crest the dip amount of the right and the left limb is $20^{0.}$

Fig 32- Fold in the Metapelites

Day 6 (12/03/2022)

6.1) Site Location- Surlikal

Geographical distribution – Latitude: $16^0$08’10.6”N Longitude: $75^0$54’06.7”E

The rock is Clastic Argillaceoius Sedimentary rock which is texturally foliated and shows platy minerals aligned in the one direction that imparts schistosity to the rock and the Crenulation Cleavage that shows mild effervescence. The clay minerals can be Chlorite, sericite. The matrix is ferruginous and calcareous with the soapy appearance of the rock. The rock shows two sets of lineation that intersecting at 120^0-60^0. The parent rock can be petilic Sedimentary rock and the Rock is **Schist.**

Fig.33- Creanulation Clavage into the schistose Rock

6.2) Site Location- Amingad

Geographical distribution – Latitude: $16^0$08’10.6”N Longitude: $75^0$54’06.7”E

The rock is exposed over a hillock that is texturally coarse grain, holocrystalline, porphyritic with the leucocratic colour Index and Minerallogically composed of Alkali feldspar and quartz. The phenocryst are of the mineral orthoclase feldspar with the size 5-8 cm. At the base of the hillock the rock is more jointed and the fractures are closely spaced. The rock is undergone through the mechanical weathering and has turned into the large boulders.

At the middle region of the hill the rock is composed of the sub-angular rudaceous clast size particles and the exposed rock is conglomerate with the clast size of 5-10 cm.

In the upper region of the hill the rock is undergone through partial metamorphism of the sandstone and is changed to quartzite in which the relict sedimentary feature such as cross bedding is preserved.

The fine grain sized layers are seen between the quartzites. These are called as **Slivers** that are striking $N145^0$ and dipping towards $N60^0$ by 20^0.

CONCLUSION

From the field site visit in the kaladgi Supergroup, it is inferred that the BHQ , BHJ and the metapelites of the Hungund schist belt serve as the basement rock for the Kaladgi supergroup. After this Salgundi conglomerate of the Ramdurg formation is the oldest rock of the kaladgi sequence of rocks. It is followed by Saundatti Quartzite and the Manoli Argillite. Over lying Chiksellikere Limestone of the Yendigeri Formation of the Lokapur Subgroup. Bevinmatti Conglomerate of Kundargi Formation marks disconfirmity between the Lokapur Subgroup and the Simikeri Subgroup and overlying is the Muchkundi Quartzite.

Bagalkot group and Badami Group is are separated by an angular unconformity.Followed by the Cave temple Arenite of the Keru Formation and then after Halkurki shale and konkankappa Limestone of the Katageri Formation of the Badami Group.

This basin is intruded by Granites and pegmatites and the overlying Deccan traps.

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