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Views expressed in various articles belong exclusively to their respective authors and are not essentially that of OGSA. -Editor

EDITORIAL

Orissa is endowed with huge mineral resources such as iron ore, graphite, bauxite, manganese ore, chromite, limestone and coal etc. It has as much as 98% of the chromite resources, 70% of the bauxite resources, 43% of graphite, 26% of iron ore and 23% of total coal resources of the country. This figure indicates why our state stands out strongly against all other states so far mineral resources are concerned. The geological set up of the state is a nature's gift, but the incessant and impeccable endeavor of the geoscientists who have worked hard in remote inaccessible terrains to unearth these hidden treasures have to be duly recognized. Kudos to all the workers for making us so proud. The mineral map of the state is still getting brighter with the discovery of diamondiferous olivine-lamproite pipe rock in Nuapara district and platinum group of elements in Baula-Nausahi complex.

The mining industry is a major driving force for economic, social and political development for its ability to generate employment and support to secondary and tertiary industries (capital goods, services, consumables, manufacturing, technology development etc.). Industrialization is at its peak in these days and liberalization of mineral policy has opened the flood gate for entrepreneurs from across the globe. Substantial mineral resources and locational advantages (well connected to sea and air) coupled with adequate human resources have made Orissa a lucrative destination.

Mineral is a non-renewable commodity, once taken out from the bowel of earth is gone for ever. It is the paramount responsibility of the present generation to manage and use the mineral resources at its disposal in a judicious and sustainable manner and thereby help conserve the resources for our posterity.

In the above context it is high time to reassess the reserve position of the mineral resources of the state. All the exploration organizations including GSI, OMC, OMDC and others have to contribute their bit. A data base on the reserve position and up to date status positions of different mineral deposits are to be prepared by a co-ordinated approach amongst exploring and exploiting agencies. Our future work should thrust upon investigation of minor minerals like nickel, cobalt, platinum and the other mineral deposits having marginal and leaner grades that hitherto appeared unimportant and unviable. More stress has to be given to utilize these low grade ores.

The need of the hour is to strengthen exploration through advanced scientific methods and equipment. Latest trends suggest acquisition and interpretation of geophysical data, application of GIS and remote sensing as potential tools in mineral prospecting. Our R & D activities need to be improved in order to keep us parallel with other world leaders.

With all our sincere efforts and focused motivation, I wish we will lead our state to the epitome of mineral development.

BHARUAMUNDA OLIVINE LAMPROITE BODY

Narottam Sahu
Geologist

Sincere and consistent effort has gifted the fourth olivine lamproite body around Dharambandha near the village Bharuamunda in Nuapada district. It is located (Lat. 20°42'21"N Long. 82°24'54"E) at a distance of 300 m N60°W of the village Bharuamunda featured in SITS No. 64 L/6. It is exposed on a deeply cut nala and emplaced as apophyges along the joint plane of pink granite. The rock is greenish in look, soapy and soft due to alteration of olivine to serpentine. It is composed of olivine (serpentinised) phlogopite and opaque (may be chromite?). At places rounded olivine megacrysts have been located. Calcretes are also associated with the rock as a secondary product.

Total 18 nos. of pits and 4 nos. of trenches were given so far to delineate the shape and size of the olivine lamproite body. The excavation work

*OGSA deeply mourns the untimely sad demise of **G P Ludam**, one of its popular members, on 14th January 2006. Late G P Ludam has done extensive field work in Karlapat bauxite deposit, Rairakhol / Padampur Coal occurrence and many other projects.LateLudam was a gifted singer and kept the camps in good humour. Apart from his contributions to our world, he will always be remembered for his simplicity and adorable personality He is survived by his wife, two sons and a daughter. Let his soul rest in peace.*

reveals that the body has an approximate dimension of 100 m X 100 m. The western side of the body is covered with thick pile of grey granitic soil. The trench wall section indicates that the olivine lamproite body is not plug type as it is not continuing at depth but intruded along the weak plane of pink granite as apophyges. The main pipe is not yet located in the area.

The profile indicates that the ground surface is occupied by grey soil followed by olivine lamproite. Below the lamproite body, mixture of pink granite and lamproite is noticed. Below this, pink granite is found at the base of the trench. Indicator minerals from the lamproite body are obtained which are only chromite grains. EPMA of two chromite grains are done in RRL, Bhubaneswar and the result is plotted which falls well within the sobolev's line. Total 77 tones of bulk samples from the lamproite body have been processed to check up the diamond incidence of the rock. Let's hope positive for the diamondiferous nature of the body.

SEA LEVEL CHANGES ALONG THE SOUTHERN GANJAM COAST

P.C. Mishra
Geologist

The marine marginal zone between Sunapurpeta and Golabandha of southern Ganjam coast (Toposheet No. 74 A/16) preserve the ancient play of sea in recent geological past. Study of satellite images, ground truthing, sediment types, alteration characteristics, geomprhological units, shallow marine faunal bioturbations (Oyster, Pelecrypods, Gastropods, hard skeletal remains), presence of old estuaries, termination of palaeo channels, abandoned tidal creeks and textural analysis of sediments bears the testimony of past sea level oscillations and clearly points towards at least three ancient strand lines located inland in addition to the present one which has been stable since 6000 years B.P. The western most palaeo strand plane is evidenced from linear sandy ridges akin to the present dune system extending from Gobindpur to Haradonga over a length of about 4 km with variable width and has been oxidized and reddened significantly. These inland red sand dunes lies at a distance of 4.5 to 5 km inland from the present coast and

QUALITY OF GROUND WATER IN NORTH-EASTERN PART OF GONDIA BLOCK OF DHENKANAL DISTRICT – A CASE STUDY

N.K. Mishra
Geologist

Importance of ground water is increasing everyday due to ever increasing demand for potable and irrigation water and inadequacy of available surface water. Therefore 60 numbers of pre-monsoon water samples had been collected from dug wells and perennial seepages from Pingua, Nihalprasad, Dasmanapatana, Bega, Khankira, Laulai, Ratanpur and Letheka panchayats lying in the north-eastern part of Gondia Block of Dhenkanal district during NRIS survey on 2003-04 field season to assess the potability basing on the below stated standard.

Potable Ground Water

Sl. No.	Parameter	Concentration in working area	WHO standard (1984)		Indian standard (1991)		Undesirable effect outside highest desirable limit
			Highest desirable	Maximum permissible	Highest desirable	Maximum permissible	
1	pH	6.0 - 7.8	6.5-8.5	7.0-8.5	6.5-8.5	No relaxation	Water will affect mucous membrane
2	TDS	20 - 1874	500	1000	50	2000	May cause gastrointestinal irritation
3	Ca	12 - 432	75	200	75	200	Encrustation in water supply structure, adverse effects on domestic use
4	Mg	28 - 272	30	150	30	100	-
5	Na	3.8 - 8.9	-	200	-	-	-
6	Fe	0.02 - 4.0	0.3	1.0	0.3	1.0	Taste, appearance are affected, promotes Fe bacteria
7	Cl	12 - 364	200	600	250	1000	Taste corrosion and palatability are affected
8	SO_4	-	200	400	200	400	Causes gastro-intestinal irritation when Mg or Na are present
9	NO_3	-	45	-	45	100	Methaenoglobinemia takes place
10	F	-	-	-	1.0	1.5	High fluoride may cause fluorosis
11	TH (as $CaCO_3$)	44 - 588	100	500	300	600	Encrustation in water supply structure

N.B. Units = mg/l except pH.

The mean concentration of constituents like Ca, Mg, TH etc. found in the ground water in the working area are 97, 92 and 195 respectively & well within tolerance limit as regards its potability. The mean pH value is 6.97. The concentration of other parameters like Na, Cl, SO_4 etc. lie within the maximum permissible tolerance limit standardized by WHO. Still it is observed that Ca concentration in three water samples, TDS concentration in four water samples and Fe concentration in twenty (One third) samples are more than the highest permissible limit. Excess Ca is noticed in Solagadia, Bega and Tolaklundi villages which may cause adverse effect on domestic use as well as encrustation in the water supply structure. The content of total dissolved solid (TDS) in the working area varies from 20 mg/l to 1874 mg/l with a mean value of 372. The four localities from where water sample contains TDS more than 1000 mg/l are Karadabari, Badapokharia, Ratanpur and Tolaklundi. The people of these villages may get affected by gastro-intestinal irritation if they use this water directly without proper filtrations.

The Fe content in ground water in the working area varies from 0.02 mg/l to 4.0 mg/l and excess iron (>1 mg/l) is noticed in 20 samples drawn from Letheka, Nihalprasad, Bega, Dasmanapatna, Laulai, Pingua and Ratanpur panchayats (described in order of abundance). Only Khankira panchayat has < 1 mg/l iron content in its ground water. Excess iron affects taste and appearance as well as causes Fe bacteria if consumed directly. The ground water in this area may be treated in iron removal plant before its use.

attained a maximum height of 30 m above m.s.l. These red sands are thought to be the marine equivalent of the older alluvium of northern Orissa. This linear sandy stretch has been breached by a Palaeo estuary around east of Bayali and again continues around west of Keluapali terminating in an old estuary of Sapua Nala around east of Satabandha. The second Palaeo strand plane is evidence from abrupt termination of Palaeo channels, abandoned estuaries, swale, negatively skewed linear sandy stretches with organic remains located at about 3 km inland around Biswanathpur, Nuapali, Mendrajpur, Hantulu, Lodigam. The third Palaeo strand line is about 1.5 km inland behind the present day rear dunes, which is evidenced from the satellite data and occurrence of beach like coarser limonitised sand around Chandanbarha, Katuru, Eksing, Nakavaram etc. Critical analysis of the subsurface samples also corroborates presence of three ancient strand planes in the area of which those located 5 km and 3 km inland respectively appears to correspond to transgressional phase while the 3rd one close to present coast is thought to be of regressive phase which need to be established by further analysis. Presence of fine oxidized/limontised sand at various depth levels suggesting their Aeolian nature are thought to be of sand dunes of regressional phase of last Glacial Maxima i.e. 18000 year B.P. when the sea level went down 120 m exposing about 25 km of shelf, from where wind had blown out the sediments inland and the red colouration is due to in-situ weathering of iron bearing heavies probably during Holocene.

THE PALAEO TIDAL FLAT AROUND CHILKA LAGOON

J.P.Behera
Geologist

The Remote Sensing Studies, around Chilka Lagoon, have enabled to establish palaeo tidal flats around the peripheral margin of the lagoon. For the purpose, IRS-ID PAN Images in 1:25,000 scale were interpreted. The palaeo tidal flats were easily identified and delineated due to their distinct dark tone and dark grey color with respect to the surroundings. During ground truthing the sediment of these units occurring around Sipakuda-Gourangapatna (74 E/3/NW), Santhasingpur (74 E/5/SW), Manjalajori (74 E/5/NE) and Bhatapara area (74 E/9/NW) are marked to be dark in color containing very fine silt and clay, which are sticky when wet. Near Sipakuda area a thick bed of pelecypod shells of lagoonal/ marine in origin was seen to be impregnated in to this silt and clay bed at a depth of about 1 to 1.3 m below ground level indicating lagoonal environment prevailing in the past.

Four nos. of sediment samples from above locations were collected for granulometric studies and the size fractions of these sediments were ranging between 4.5Φ to 8Φ, hence these were subjected for pipette analysis. The results thus obtained were plotted in log-probability plot (between grain size vs. cumulative weight %). The different grain size parameters such as mean

RESURGENCE OF ECONOMY THROUGH GROUNDWATER IN PARTS OF GONDIA BLOCK, DHENKANAL DISTRICT

M.R. Panda, Geologist

Agriculture upholds its sublime plight towards a progressive economy in spite of rapid industrialization. Bestowed with as many as thirteen intrinsic seepages (autoflow condition of groundwater) the northern Grampanchayats (GPs) namely Khandabandha, Kashipur, Mandar, Karamul, Bainsia and Kaluria of Gondia Block, Dhenkanal district can now aspire for a brighter economy through agriculture.

Hydro geological studies (F.S. 2002-03) reveal that these GPs at the northern fringe of Gondia Block, located to south of river Brahmani have adequate groundwater potential manifested as seepages. Observations recorded over fifty-two hydrograph stations suggest a very low range (0.25 m – 2.10 m) of fluctuation of water table during pre-and post monsoon period, which attest the plenitude of groundwater reserve. The range of pH and total hardness of groundwater is 6 to 7.6 and 24 to 644 respectively. The terrain exhibits a general slope from south to north and the average inland R.L. ranges from 44.10 m – 77.69 m, whereas it ranges from 31.00 m – 41.00 m along southern bank of river Brahmani. Interpretation of structural data suggests that the seepages are aligned mostly along the oblique and dip shears and less frequently along strike which is parallel to Brahmani shear. The cross-cutting of the local shears result in overflow of groundwater in the form of seepages.

Land use/land cover data emphasize about 60% of the total GPs area under agricultural category. In fact, the proximity of the GPs to river Brahmani has not been judiciously exploited. Lack of irrigation system renders single-crop cultivation resulting in an age-old doomed economy. For optimum utilization of agricultural land round the eyar, wide-diameter bore well should be drilled at every seepage and suitably be fitted with pump to facilitate irrigation in the adjoining area. Also, construction of wide-diameter dug-well (Jeevandhara) along the shear joining two seepages will be of immense help to the cropland in between.

The presence of thirteen seepages mostly within agricultural land is indubitably an enviable asset to the GPs. Thirteen seepages, if properly developed can irrigate 71.97 km^2 of agricultural land in six GPs (@ 5.5 km^2 area per seepage). Cultivation of commercial crops like sugarcane, oilseeds, lentils, vegetables etc. should be practiced along with paddy by way of double-crop farming on co-operative basis to harness maximum utility of groundwater and help ameliorate economic condition of the individuals.

Details of the location of seepages

Sl. No.	No. of seepages	Location of seepages with respect to nearest village	Distance from corresponding village (Approx.)	Grampanchayat (GP)
1	2	SSW of Khandabandha	2.5 km	Khandabhandha
2	1	SSE of Lahara	500 m	Kashipur
3	2	ESE of Kamalpur	600 m	Mandar
4	1	SE of Mandar	300 m	Mandar
5	1	NNE of Majhipal	100 m	Karamul
6	1	NNW of Gopalpur	250 m	Karamul
7	1	NE of Churakhia	350 m	Bainsia
8	2	SE of Churakhia	500 m	Bainsia
9	1	SE of Latadeipur	2.00 km	Kaluria
10	1	NW of Mahapada	150 m	Kaluria

diameter (M_z), standard deviation (σ_1), Kurtosis (K_G) and Skewness (S_{K1}) were calculated using formula after Folk and Ward 1957. These parameters were fit in to the following equations to determine the palaeo environment of deposition (Sahu, 1993)

$Y_{Beach/Shallow\ marine} = 15.65343\ Mz + 65.7091\sigma 1^2 + 18.1071Sk1 + 18.5043KG$ (Eq-12)

Yu (un-known sample) value Less than (65.3650) indicates beach and greater than (65.3650) signifies shallow marine environment. Similarly, to countercheck the above results the following equation was also used.

$Y_{shallow\ marine/Fluvial} = 0.2852\ M_z - 8.7604\sigma^2_1 - 4.8932\ Sk_1 + 0.0482\ K_G$ (Eq-13)

Yu less than (-7.4190) Signifies fluvial and greater than (-7.4190) signifies shallow marine environment.

The values of Yu in equation -12 were calculated and the results thus obtained (184.32, 159.05, 184.67 and 182.433) are found to be greater than (65.3650) indicating shallow marine condition of deposition. Where as, the counter check value of Yu in equation -13 are (-1.656, 1.721, -3.982 and -2.086), which also indicate the shallow marine condition of deposition, as they are greater than (-7.4190).

The presence of palaeo tidal flats around the Chilka Lagoon are quite plausible, as the area of Chilka has been decreasing continuously at the rate of 1.45 sq. km per annum since 1925.It is reported that the water spread of Chilka Lagoon has reduced from 1165 sq. km in 1925 to 790 sq. km in 1986(Das & Samal, 1986), giving rise to development of such numerous palaeo tidal flats around the lagoon. More studies in this regard is warranted.

A POTENTIAL COAL BLOCK FOR SEAM-I

A.K. Mohanty
Deputy Director Geology

The exploration of coal in western fringe of Talchir Coal field (Rail block) undertaken by the Directorate of Geology, Orissa brought 5 nos. of coal seam in to limelight. The most alluring seam-I is developed 1.83 m thickness in Paljhar area (T.S. No. 73 C/12). This coal seam was intersected in BHR-17 at 14.66 m – 16.49 m depth with two in seam partings i.e. 0.18 m carb shale and 0.19 m grey shale sandy. The seam-I (top) is 0.84 m (14.66m – 15.50m) having U.H.V. value 5754 Cal/kg of B grade. Similarly, the middle one intersected at 15.68 m – 16.03 m (0.30 m) pays U.H.V. value 6123 Cal/Kg and ranks B grade. The bottom split developed at 16.22 m – 16.49 m (0.27 m) and U.H.V. value is 5171 Cal/Kg of C grade. The seam (with U.H.V. calculated as 5682 Cal/Kg) belongs to B grade. A small exposure of the aforesaid seam is noticed along the Champali Jhor course near ๐ 202 m.

While comparing its potentiality it has better prospect than the seam-I of Brahmani Block, already proved by CMPDI, RI-VII through the Directorate of Geology, Orissa. Two sq. km area around Paljhar may be considered as the right block for proving seam-I by CMPDI/MCL or any private sector for its shallow occurrence.

MYLONITES- MILESTONES OF DUCTILE SHEAR ZONE

Mrs S. Sahoo
Petrologist

The term mylonite was first coined by Lapwarth in 1885. This is the most commonly encountered fault rock type. Mylonites are schist like products of ductile reworking of the country rock within a shear zone. It can vary in width from centimeters to tens of kilometer. Under the microscope mylonites can be distinguished by the characters listed below:-

1) Grain size reduction and development of mylonitic fabric.
2) Closely spaced foliation of alternating layers of recrystallised grains.
3) Milky ribbons of fine grained recrystallised feldspar.
4) Fine platy biotites.
5) Neomineralisation (Development of new grains like biotite, kyanite, staurolite and muscovite).
6) Development of eyed (augen) structure and mortar structure.
7) Laminated structure resembling flow structure in a rhyolitic lava.

The dominant process of grain refinement in mylonites is by syntectonic recrystallisation and neomineralisation. With increasing shearing stress advancement occur in breaking down of the minerals. So the more stubborn uncrossed relics of the country rock remains as lenticles, with a common orientation, set on a fine grained matrix. This is called the characteristic 'eyed' structure. But these are gradually ground away and ultimately disappear. So the percentage of reworked matrix relative to the clasts of parent country rock mineral shows a picture of different stages of shearing. With increasing shearing strain mylonites can be broadly classified into three groups i) Protomylonite ii) Mylonite and iii) ultra-mylonites.

Mylonite acts as an important tool in recognizing a shear zone i.e a prime target for mineral exploration, sites for igneous intrusion (like alkaline rocks and anorthosite, potential hazardous site due to concentration of radom gas, U and Th. The petrofabric study of the mylonites infers the strain condition of the ductile shear zone indicating pressure temperature condition, flow type and the deformation history.

SELF POTENTIAL SURVEY FOR GRAPHITE

K.C. Mohapatra
Deputy Director Geology

Occurrence of graphite in Tumudibandh belt of Phulbani district was investigated by Directorate of Mining and Geology, Orissa in the past. The khondalite suite of Eastern Ghat rocks and associated migmatite exhibit graphite mineralization under strong influence of structural deformation. The disseminated graphite flakes are amenable to beneficiation in commercial scale. A number of graphite veins within the tract have been brought to light in the course of mining and prospecting operations. In order to delineate the graphite bearing areas and explore the concealed veins and to prove the extensions of known deposits, geophysical survey was considered necessary.

One such deposit near Sunagan in Phulbani district (6 km from Tumudibandh, on Tumudibandh-Madanpur Rampur Road) was taken up for geophysical investigation by self potential method. The area covered was 2.5 sq. km. The result indicated that high negative values correspond the mineralized graphite body where as the positive values are associated with non-graphite materials. Exploratory excavations were done with a view to confirming the S.P. – anomaly over the graphite bearing material. From trial pit it was examined that the fixed carbon percentage increases with depth. So it is observed that the S.P. method is indicative of graphite mineralization.

(Presented in Eleventh Annual Convention and Seminar on Exploration Geophysics conducted by Association of Exploration Geophysicists on 1985)

WATER IS FAST DEPLETING, SAVE IT

D.K. Sahoo
Geologist

Water (H_2O), a remarkable combination of hydrogen and oxygen is an indispensable component of our ecosystem. It has been described as 'elixir of life' in Rig veda, which means a life giving system. Hence water is a prime need of a life on land/ocean. The total amount of water contained in the ocean is so large that it would be sufficient to submerge the entire globe to a depth of about 270 m taking the earth a perfectly

smooth sphere. The water budget of our planet shows that the oceans account for about 97 percent of the total, glaciers store a little over 2 percent and from the remaining quantity, ground water accounts for 0.62 percent and the river lake water, soil water etc. accounts for the rest small part. Thus the amount of surface and ground water taken together is so small a quantity that it accounts for less than 1 percent of the total. And this amount of water is only responsible for sustenance of life on the earth. It is now believed by some environmentalists /geologists that the fresh water (surface & ground water) is depleting and gradually becoming quite insufficient to support the rapidly growing human population and industrialization. Hence the time has come the consciousness should be developed among all human beings to prevent wastage of water. This could be achieved by making more and more people aware of the future problems that would be faced by them if use of water is not properly regulated from now on.

PALAEO-FLOW PATTERN ALONG THE SOUTHERN MARGIN OF THE TALCHIR BASIN, ORISSA

Dr (Mrs) R Das
Geologist

The southern margin of the Talchir basin around Angul is filled with about 700 m of Gondwana strata comprising the Talchir and Damuda Groups. Extensive development of primary sedimentary structures like trough and planner cross stratifications and asymmetric current ripples within the siliciclastic sediments provided an excellent opportunity to workout the detailed palaoflow pattern of the succession. The study revealed that the sedimentation in the lower part of Talchir succession was initiated by a predominantly northeasterly unidirectional palaeoflow. This was later changed over to a dominant northerly radiating type of palaeoflow during middle part of Talchir succession, suggesting a transverse filling of the Basin. The upper part of Talchir succession and the overlying Damuda succession, however, show a significant change in the palaeflow direction from north to northwest with a unidirectional palaeoflow pattern implying an axial filling of the basin.

Such sinistral swing in the palaeoflow pattern from northeast to north and then to northwest has been considered as the basic sedimentary response to source area denudation and tectonism and basin floor subsidence which brought about a change in the palaeoslope of the depositional surface. The observed upward variation in the grain size of the clastic sediments and changing pattern of heavy mineral suites in upward progression confirms the above conclusion.

PLANTS versus POLLUTION

Removing pollutants from contaminated soil and water is a lengthy, expensive, and often difficult business. However, ordinary plants are proving capable of doing the job all by themselves.

Scientists are considering using the common pondweed and periwinkle to clean up old munition sites and reclaim the land. In experiments, sterilized parrot feather and periwinkle extracted TNT so well that within a week no trace of explosive remained in the plants' tissues, nor did burning them produce an explosion. Other researchers discovered that cells and extracts of the common sugar beet could absorb and degrade nitroglycerin.

What about water heavily contaminated with radioactivity? Sunflowers seem to be helpful. Six-week-old sunflowers were used to tackle contaminated wastewater in an abandoned uranium factory in Ohio, U.S.A. The result? Uranimum contamination was reduced from an average of 200 micrograms per liter to below the safety limit of 20 micrograms per liter. Other tests, at the Chernobyl reactor, near Kiev, showed that sunflowers soaked up 95 percent of the radioactive strontium and cesium within ten days.

Farmers may soon be using the yellow iris and the bulrush in their efforts to avoid polluting watercourses with pesticides and herbicides. This decontamination process is accomplished primarily by microbes in the plants' root systems that break down the contaminants and clear the water.

The above examples illustrate the marvelous capacity of the earth to cleanse itself.

RADIOACTIVE FALLOUT, A MATTER OF CONCERN

Following tests of nuclear weapons in the 1950's, strontium 90 (Sr90), a by-product of nuclear reactions, was found in baby teeth, reports the Globe and Mail newspaper of Canada. At the time, this was blamed for a surge in cancer among children.

Now, decades later, scientists associated with the U.S. Radiation and Public Health Project are concerned again. Dr. Janet Sherman, an internal-medicine specialist working with the project, explains that "Sr90 levels in baby teeth of children born since 1990 are reaching levels that were in existence during the above ground testing years".

Where is the Sr90 coming from? Some scientists point to past nuclear accidents, to radiation from properly functioning nuclear plants, or to the bomb tests carried out many years ago as possible sources. Whatever its origin, humans take in Sr90 by eating food from contaminated plants and drinking milk from cows that have eaten tainted grass. Since Sr90 is chemically similar to calcium, human store the radioactive material in their bones, increasing the risk of bone cancer and leukemia.

The 'Globe' also expresses concern about future generations' exposure to radiation. "When removed from the reactor core," the newspaper explains, "(nuclear waste) is about a million times more radioactive than when it was loaded. A freshly spent fuel bundle is reckoned to be so deadly that a person standing only a meter (three feet) away would die of radiation poisoning within an hour."

[Courtesy: Awake February 22, 2001
*Compiled by **Kishore Naik**, Joint Director Geology, Berhampur]*

TSUNAMIS – NEED TO BE PREPARED!

December, 2004 s Disaster and recurrence of Tsunami in July, 2006 on Indonesia's coast have a lot of stories for the weeping humanity. Report says that 7.7 magnitude under sea quake that unleashed the two meter high wall of water on Indonesia's coast. Some recognized the danger when they saw the sea recede and they fled to higher ground screaming "Tsunami Tsunami". A black wave shot to shore a half an hour later, witnesses, said, sending boats, cars and motor-bike crashing into resorts and fishing villages and flooding areas 400 meters inland. Pangandaran, a once-idyllic Indian Ocean resort that bore the brunt of the earthquake – triggered Tsunami. July, 2006 Tsunami effect is also experienced along the Puri Coast which washed away the personal belongings of Fisherman.

Mr. Suhardjono, Head of the Earthquake Unit of Indonesia's Meteorology and Geophysics Agency BMG, said that July, 2006 Tsunami and the one in December, 2004 were caused by movements at the intersection of the Indo-Australian and Eurasian plates. These movements could lead to more earthquakes in the future. Constant movement of the tectonic plates over the last 100 years or so has resulted in a lot of built up energy waiting to be released.

The above facts warrant immediate attention for Disaster Management and Preparedness on Coastal Tracts of India.

*Abridged and compiled by **P.C. Vajani**, Geologist*
(Source The Statesman and Dainik Jagaran, July, 2006 Issue).

NEWS CONGLOMERATE

Compiled by S K Mohanty
Geologist

Ministry of Earth Sciences

The centre approved on May 9th 2006 the proposal to re-organise the ministry of Ocean Development as ministry of Earth Sciences and also gave the go-ahead to form an Earth Commission in India. The centre said the ministry of Earth Sciences would enable an integrated approach on issues concerning water, global climatic changes, environment, meteorology, seismology and other earth sciences.

Similarly, the commission will to help implement various policies concerning earth sciences and ensure necessary inter-disciplinary integration.

International Union of Geological Sciences (IUGS): A profile

The International Union of Geological Sciences (IUGS) with 117 national members aims to promote development of earth sciences through the support of broad based scientific studies relevant to the entire earth-system; to apply the result of these and other studies to preserve Earth's natural environment, using all natural resources wisely and improving the prosperity of nations and the quality of human life; and to strengthen public awareness of geology and advance geological education in the widest sense. The Union was founded in March, 1961 in response to a need to co-ordinate international research programmes on geo-science on a continuing basis.

Currently IUGS prioritises on

- Initiatives related to the identification and assessment of energy and mineral resources
- Global change
- Geological hazards
- Environmental geology

IUGS commissions, committees and boards are connected with a wide range of geological research of direct interest to governments, industries and academic groups within the earth sciences.

The IUGS Journal, Episodes, is published in Beijing by Ministry of Land & Resources of the People's Republic of China.

International Geoscience Project

The International Geological correlation Programme (IGCP) with national committees in 100 countries and contact address in 21 more countries is the only truly Global Earth Science Programme doing "grass roots" research. Lunched in 1972 as a joint venture between UNESCO and IUGS, it is one of the most successful initiatives ever undertaken. The objective is to bring together scientists from all over the world and enhance interaction through joint research work, meetings and workshops. About 40 research projects involving more than a thousand participants are currently operating under the auspices of the IGCP.

OGSA NEWS

Trainings and Courses

- Mrs S A Jena attended a training course on "GIS and Remote Sensing" in GSI, Hyderabad.
- Mrs A B Mishra attended 7th Indian Gemmological Seminar at Darjeeling and Gangtok from 6.11.2005 to12.11.2005.
- S K Mohanty has presented a paper on "Orissan Chromite Ore Resource Development – An Overview" in a seminar on "Harnessing Natural Resources of Orissa for Sustainable Development- Energy and Environment Issues" held during 17-18 Feb 2006 at Bhubaneswar.
- J R Patnaik and S K Mohanty attended an interactive meet on "Nickel Extraction Technology from Chromite Overburden" in RRL, Bhubaneswar on 15.05.2006.
- Mrs S Sahoo attended a training on "Art of Petrography" at Banaras Hindu University during 17 – 27 April 2006.
- B C Patnaik, B C Mohanty, K Patnaik, K D Nath, K Naik attended a national seminar on "Geoscience Education and Mineral Development" organized by Alumni Association of Department of Geology, Utkal University during 11-12 March 2006.

Promotions

- Mrs S Das was promoted to the post of Director Geology.
- Dr R C Samal was promoted to the post of JDG L-I.
- B C Patnaik was promoted to the post of JDG and posted at Koraput.
- N M Hasan was promoted to the post of JDG and posted at Sambalpur.
- S K Das was promoted to the post of JDG and posted at Keonjhar.
- M Patnaik was promoted to the post of JDG and posted at Balangir.
- A K Mohanty was promoted to DDG and posted at Sambalpur.
- A T Dash was promoted to DDG and posted at Keonjhar.
- T Mohanta was promoted to DDG and posted at Koraput.
- S N Parida was promoted to DDG and posted at Bhubaneswar.
- D N Pani was promoted to DDG and posted at Bhubaneswar.
- S K Padhi was promoted to DDG and posted at Berhampur.
- B C Mohanty was promoted to DDG and posted at Sambalpur.
- M R Mishra was promoted to DDG and posted at Bhubaneswar.
- G K Bhuyan was promoted to DDG and posted at Bhubaneswar.
- M K Senapati was promoted to DDG and posted at Bhubaneswar.
- K C Mohapatra was promoted to DDG and posted at Bhubaneswar.
- A B Mishra was promoted to DDG and posted at Bhubaneswar.

Transfer and Posting

- G Pradhan, Geologist was transferred from Berhampur to Bhubaneswar.
- Mrs S Jena, Geologist was transferred from Berhampur to Bhubaneswar.

Retirement

- B P Mishra, JDG L-I retired on 30.09.2005 on super annuation.
- P C Joshi, JDG retired on 31.10.2005 on super annuation.
- S R Mohapatra, DDG retired on 31.08.2005 on super annuation.
- P Subudhi, DDG retired on 30.09.2005 on super annuation.
- A K Swain, DDG retired on 28.02.2006 on super annuation.

OBITUARY

*OGSA mourns the sad demise of **S Somanath**, Ex-JDG L-I. May the Departed soul rest in peace.*