DISCUSSION

MEGAFLORAL ASSEMBLAGE SIMILAR TO KARHARBARI BIOZONE FROM TALCHIR COALFIELD OF MAHANADI BASIN, ORISSA by Kamal Jeet Singh, Shreerup Goswami and Shaila Chandra. Jour. Geol. Soc. India, v.68(2), 2006, pp.277-287.

S. Kanjilal, Department of Geology, BHU, Varanasi – 221 005, comments:

The assemblage has been claimed to comprise 10 plant taxa (Abstract, para 2, lines 3-6) but only eight of them have been formally dealt with; the left outs being *Euryphyllum whittianum* and *E. maithyi* (if it is for the reason these two form-species have already dealt with by Chandra Singh (1996?a) then the same argument should become automatically applicable to the other recorded plant taxa, and then the very purpose of writing this paper would become invalidated!).

In the Introduction and Geological Setting (p.277, col. 1, para 1, lines 1-3), the Mahanadi Basin has been declared to be one of the "five major sedimentary basins of Peninsular India". The assertion about the number (five) invites contest because all the informed students of Indian geology know that this is untrue.

Singh et al. like many other writers, is indifferent about the stratigraphic usage of the formal and informal terminologies, as exemplified by their use of the terms 'formations' (Abs., para 1, line 6) and 'Formations (Abs. para 1 line 4; Introduction and Geological Setting, p.277, col.1, lines 14-17). Are the authors reluctant to accept and follow the international stratigraphic rules?

The stretch of the Mahanadi Basin (p.277, col.2, para 2) provided by the authors is somewhat incorrect. The Fig.1 (p.279) clearly indicates that the southern limit of the basin is lower than 20°50' N latitude and the eastern one exceeds 85°23' E longitude. Many important localities referred to in the text are not mentioned in Fig.1. For want of this, the readers fail to appreciate the occurrence of fossils in the geological set up of the study area. Faults have been shown (Fig.1) by broken lines of different types.

This paper is about the Karharbari flora, biozones, etc around the south Balanda Colliery; an enumeration of papers on Kamthi Formation sediments and flora (p.278, col.2, para 3) is unwarranted because these have no bearing on the floral assemblage and its significance on the fossils/ stratigraphy of the study area, and therefore, redundant. An exclusion of these works (23 titles) would have made this paper more focused and tidy.

The specimen numbers (39019-39025) of the fossil assemblage under discussion (p.280, col.1) indicates that the repository comprises (only) seven specimens. On the contrary, the authors have described eight species. Of these only five have been figured (with their registration numbers); the unfigured ones being *Glossopteris communis* Feistmantel, *G. browniana* Brongniart, and *Surangephyllum elogatum* (Lacey et al.) whose registration numbers are not provided.

In addition to these discrepancies, one more is that of *Euryphyllum whittianum* Feistmantel which, although has been claimed (in the Abstract) to be a part of the present assemblage (apparently collected by the present authors only), is not discussed at all by them. Yet the authors have figured one specimen with a registration number not subscribed by them.

Like quite a few indifferent ones, the present authors too have refrained from providing the readers synonymy of the described species. Not providing this information would amount to enforcing a piped vision about the taxon on them by the authors. Is it a service to our science?

Besides these lacunae, there are a number of other examples of lack of professionalism, and impatience as under:

- The Giridih coalfield belonged to Bihar (p.284, col.1, para 2 line 4) earlier. After carving out the State of Jharkhand, the said coalfield is no more a part of Bihar, but in Jharkhand. Is it not strange that the authors are yet unaware of this change?
- *Noeggerathiopsis hislopii* (Bunbury) in the present assemblage is represented by two individuals (p.280, col2, lines 5-6). Is it not a hasty declaration that *hislopii* leaf apex varies from "obtuse to rounded" on the basis of only two specimens (and is obtuse not rounded)? A better phraseology was expected from the authors. I would also urge the authors to confirm if the spelling of the trivial name *hislopii* is not *hislopi* (Krishnan, 1982, pp.243, 245-249, pl.v, fig.6).
- The authors have recorded the genus *Glossopteris* (p.283, col.1) to have been instituted by Brongniart is 1828. As per Sewards' opinion (1969, p.496), Brongniart proposed the generic name in 1822.
- *Glossopteris browniana* Brongniart (p.283, col.1) is represented by "five incomplete specimens" in the present(?)

collection In spite of its taxonomic importance, it has not been figured! Further, it is strange to note that none of these five specimens have been registered in the BSIP repository

- The authorship date of *Gangamopteris* McCoy is given to be 1847 (p 283, col 2) but in fact it is 1860 (see Seward, 1969, p 572)
- Similar to the point above is the case with *Gangamopteris cyclopteroides* (p 283, col 2, line 3) represented by ten specimens, three of which have been figured with their individual registration numbers (implying that seven are unregistered) What is the validity of the specific identities of these unregistered individuals? These may soon lose their *locus standii* with passage of time Thus, this is like preventing the posterity from acquiring a better and fuller concept of the taxon

  The practice followed by the authors, what they portray as "comparison", is frustrating for the readers It is like an opinion thrusted over by them without providing a meaningful comparison with other taxonomically similar looking *Gangamopteris* leaves They should have at least referred to Maithy's (1965) work wherein *clyclopteroides* has been recorded by him from the Karharbari Formation in the Giridih coalfield (Bihar, *sic* Jharkhand)
- *Glossopteris communis* Feistmantel is represented by a single specimen (not lodged in the repository) whose apex and base are not preserved Yet the authors have determined this to be lanceolate in shape, the lanceolate outline is always tapering at one end Such writings betray the sincerity of the authors Further, is the vein density of true taxanomic value because that for the authors' *communis* is much different from Maithy et al 's example (2006, p 319, col 1)
- *Surangephyllum elongatum* (p 283, col 2) is a species not very common among the myriad other Gondwana plants Although it is incomplete, it should have been figured to provide at least at partial acquaintance for readers Another matter needing the author's assessment is the statement – "base sagittate to hastate" How such a variation has been ascertained on the basis of a single specimen?
- The authors have mentioned (p 285, col 1, para 3, lines 4-5) the presence of "unaltered nature of biomass", which is puzzling Can any biomass remain unlatered since the Permian?
- In the listing of the consulted works in the Reference, I could not find those of Maithy (1965a), and Singh (2000), both on p 286 in the text On the contrary, Hughes (1868), and Puri (1952) both on p 284, Discussion and Comparison, col 1, para 3, lines 7 and 9 respectively, have slipped the author's attention from being enlisted
- Like several others the authors have not paid any head to the listing style of names according to their genders, the female names are to be written in full Thus, Chandra, S (p 285, References col 1, line 26 and elsewhere) should have been enlisted as Chandra, Shaila

Kamal Jeet Singh, Birbal Sahni Institute of Palaeobotany, 53, University Road, Lucknow - 226 007 replies

We highly appreciate the critical observations of Dr Kanjilal on our paper We are providing herewith the reply to his comments

This is true that the entire assemblage belonging to Karharbari Formation at the South Balanda Colliery is represented by 10 plant taxa but we have dealt with only 8, as the remaining two (*Euryphyllum whittianum* and *E maithyi* were described in detail during 1996 but we have illustrated one of the specimens here just to depict the entire Karharbari assemblage

We have mentioned Mahanadi Basin as one of the five major sedimentary Basins of India This is true in our paper's context as it includes the flora of Late Palaeozoic age and there are only five basins in Peninsular India that have Late Palaeozoic beginning ie , Rajmahal, Damoder, Son, Mahanadi and Pranhita-Godavari Basins

Dr Kanjilal pointed out the wrong usage of the word Formations at several places in the manuscript The stress of paper was on the palaeobotanical finds and geological usage of term Formation was slipped our attention

The latitudes 20°53' and 21°12'N and longitudes 84°20' and 85°23'E pertain only to Talchir Basin/Coalfield, not to the entire Mahanadi Basin (Raja Rao, 1982, Coalfield of India, Part II, p 41) Since our study is restricted to South Balanda Colliery, therefore we have used here a portion of the Talchir Coalfield depicting the major town of Talcher, the locality and some adjacent Figure 1 has been traced from the original geological map of Talchir Coalfield by Raja Rao 1982 The kind and type of fault lines shown in Fig 1 are similar to the original drawings of Raja Rao So we are not responsible for this

It is always appreciated by the readers if the authors provide some previous reports/works of the area in question as well as of the surrounding areas Keeping this thing in mind we have provided such additional information in our paper

The repository consists of 8 specimens (39019-39026) and they are duly registered in BSIP Museum but in the paper we mentioned them as 39019-39025 We admit our mistake Since *Glossopteris communis*, *G browniana* and *Surangephyllum* have not been illustrated in the plates, it is not mandatory to give their registration numbers We have not described *Euryphyllum* in detail as it has already been described in our paper (Chandra and Singh, 1996), we just illustrated it here to have a glimpse of entire flora

Providing synonyms is a common practice with palaeontological journals, however others do not prefer this

- Yes, Giridih Coalfield is now in Jharkhand State
- Out of two specimens of *Noeggerathiopsis hislopii* in our collection, one is obtuse while the other has some what rounded apex (more than 90°), that is why we have written it as obtuse to rounded The specific name *hislopii* is correct and *hislopi* is incorrect
- The genus *Glossopteris* was illustrated for the first time in 1822 by Brongniart, but he gave its description and the diagnosis in 1828 therefore correct date of description is 1828
- Yes, all the five specimens of *G browniana* were incomplete and therefore not illustrated As mentioned, the specimens which are not illustrated in the plates do not require registration numbers
- In 1847, McCoy described the genus *Gangamopteris* as *Cyclopteris* (?) *angustifolia* but later he separated it from the *Cyclopteris* on the plea that it has constant anastomoses of veins while *Cyclopteris* does not have such anastomoses Later, he formed the genus *Gangamopteris* and in 1875 he illustrated with specimens from Bacchus Marsh Beds in Victoria, Australia So the authorship date of *Gangamopteris* is 1875 (neither 1847 nor 1860)
- Only those specimens which are illustrated are provided with Museum registration numbers The remaining specimens of a given and studied taxon are also deposited in the Museum but they remain with the original field numbers So if somebody wants to study all the specimens of a given taxon, he or she may get access to all of them in the Museum (Illustrated ones with registration numbers as given in the paper while the remaining ones with field numbers) We have illustrated three specimens of *Gangamopteris* because of their varied shapes As far as the comparison of a given taxon is concerned, it is always advisable to compare and match with the original authors In this case *Gangamopteris cyclopteroides* was originally described by Feistmantel in 1876 We can also compare it with Maithy's specimen but then there is no limit of comparing, as more than 50 persons described this taxon so far
- Although the specimen of *Glossopteris communis* lacks apex and base, yet it's preserved middle portion clearly determines its shape to be lanceolate Dr Kanjilal perhaps did not see the original specimen of *G communis* instituted by Feistmantel in 1879 Feistmantel's specimens have a great variation range as far as the venation pattern is concerned Had he seen these specimens, he would have refrained from making this comment I, agree that Dr Maithy worked on the genus *Glossopteris* but my Ph D was on the genus *Glossopteris* exclusively and it is always advisable to compare specimens with the holotype specimens or their figures
- During referring, one of the referee also advised us to give the photograph of *Surangephyllum* in the plates and accordingly we sent a photo of it to the editor to be appended, as the original plates were with them But the editor did not fix it on the plate and unfortunately it could not be illustrated
- The term unaltered nature of biomass here means that the original plant material (mostly leaves) is preserved without any decay or without any crippling and it has well preserved phytolemma Such kind of biomass is generally called unaltered one
- The reference of Maithy 1965a and of Singh (2000) should have been in the text and similarly we missed to enlist the reference of Hughes (1868) and of Puri (1952) in the reference list
- Now coming to the names of female workers As far as my knowledge goes, there is no such ICBN code which advocates the use of full name in case of a female worker

PETROLOGICAL AND PGE MINERALISATION STUDY OF THE CHANNAGIRI MAFIC-ULTRAMAFIC COMPLEX,SHIMOGA SUPRACRUSTAL BELT, KARNATAKA by T.C. Devaraju, T.T. Alapieti, R.J. Kaukonen and T.L. Sudhakara. Jour Geol. Soc. India, v.70(4), 2007, pp.535-556

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I compliment Prof Devaraju et al for their excellent contribution on petrological and PGE mineralization aspects of the Channagiri mafic-ultramafic complex of Shimoga supracrustal belt

Geological Survey of India (GSI) also carried out surface sampling and exploration work and the highlights of work were published in 2005 and 2006 I would like to place on record that the important details pertaining to the three PGE mineralised zones in Hanumalapura block based on drilling and core sampling was recorded by the GSI The summary and highlights of achievement for Hanumalapura block and the important observations made by the GSI working group from Operations Karnataka and Goa, Southern Region are as follows

The comments on commercial potential by Prof Devaraju et al is in agreement with the observations made