

firms these bats to be *Cynopterus brachyotis ceylonensis*, similar to the report of Pradhan and Kulkarni¹.

Although it is known that this species occurs in different parts of India (Karnataka, Andhra Pradesh, Kerala and Tamil Nadu), relatively little is known about the roosting, foraging, food habit, social organization, breeding, growth and development of this bat species. Compared to other frugivorous bats, only a few studies have been done on this species and most of those report the occurrence and morphometric measurements¹⁻³. Beyond Madurai, in southern tip of Western Ghats, there is no report on the occurrence of this bat. Studies have been made extensively on

C. brachyotis only in Peninsular Malaysia⁴⁻⁷ and Srilanka⁸.

We have mentioned the latest publication⁹ and the authors are aware of earlier publications too. Since this species of bat is mostly confined to thick forest, deforestation in recent times holds a threat to this species of bat. We have undertaken extensive research and data collection on distribution, breeding, population and genetic analysis on *C. brachyotis* and plan to report at the end of our studies.

1. Pradhan, M. S. and Kulkarni, P. P., *Mammalia*, 1997, **61**, 116-118.
2. Agarwal, V. C., *Rec. Zool. Surv. India*, 1973, **67**, 261-280.

3. Das, P. K., *Rec. Zool. Surv. India*, 1986, **84**, 259-276.
4. Lim, B. L., *J. Mammal.*, 1970, **51**, 174-177.
5. Phua, P. B. and Corlett, R. T., *Malayan Nat. J.*, 1989, **42**, 251-256.
6. Funkoshi, K. and Akbar, Z., *Mammal Study*, 1997, **22**, 95-108.
7. Tan, K. H., Zubid, A. and Kunz, T. H., *J. Nat. Hist.*, 1997, **31**, 1605-1621.
8. Phillips, W. W. A., *Ceylon J. Sci.*, 1934, **B18**, 237-248.
9. Bates, P. J. J. and Harrison, D. L., *Bats of the Indian Subcontinent*, Harrison Zoological Museum, UK, 1997, pp. 22-23.

J. BALASINGH

St. John's College,
Palayamkottai 627 002, India

Gravity image of India: Regional tectonic interpretations

H. V. Ram Babu (*Curr. Sci.*, 1999, **76**, 1533-1535) has mentioned a few tectonic features that can be deciphered from this gravity image. An examination of the gravity image of India brings out a number of other interesting features, which have significant bearing on the geology, and tectonics of the Indian peninsula. I mention here some of these features with the hope that these might draw the attention of the earth scientists for stimulating discussions and offering logical interpretations.

1. Although the South Indian craton and partly the Bastar craton are typified by gravity lows, the Singhbhum and partly the Rajasthan cratons show gravity highs. Since all these cratons have almost similar Archaean cratonization history, does the above feature mean that post-Archaean reactivation has caused thinning of the continental crust in Singhbhum and Rajasthan cratons?

2. The Eastern Ghats (EG) are generally considered to be a mobile belt, but the gravity high of this belt does not support this contention. Does this mean that the EG is essentially an exhumed dense lower crust (note the granulite-facies terrain) from where the geophysical characters of mobile belt have been obliterated? In contrast, the South Indian granulite terrain possesses mobile belt gravity features. Would this aspect differentiate the two major Indian

granulite terrains, namely, the older South India and the younger EG?

3. The east coast of India has a fringe of gravity high in contrast to the west coast. It is possible that this feature signifies rift-related continental crustal stretching and thinning in the eastern continental margin of India due to separation of India and Antarctica, and absence of such extension in the western margin because of separation of India and Madagascar through transcurrent faulting.

4. The Narmada-Son lineament (NSL), very well depicted in the gravity image, clearly transects major gravity structures of the peninsula, including those of Singhbhum and Chhotanagpur plateau. A dextral sense of movement along the NSL can be deciphered. Interestingly, several small crustal blocks in the north of the NSL have been rotated anticlockwise in the northern part of the Chhotanagpur plateau due to this movement. The NSL seems to extend into Meghalaya plateau as the Dauki fault, which delimits the plateau in the south. The Meghalaya plateau has a similar gravity high picture as that of the Chhotanagpur plateau. Moreover, the Proterozoic geology including the granulite-facies metamorphism of these two terrains is also similar. It seems possible that the Meghalaya plateau has been transported from north of the Chhotanagpur plateau along the dextral

NSL to its present suspect position in post-Rajmahal traps time (note possible correspondence between the Rajmahal and the Sylhet traps).

5. The Banded Gneissic Complex (BGC), the basement terrain in Rajasthan, located between the Aravalli-Delhi fold belts (ADFB) and the Bundelkhand massif shows gravity low. This is in accordance with its unmodified cratonic characters. On the other hand, the ADFB shows gravity high, which would suggest that these fold belts do not have any significant root zone, a feature substantiated by seismic reflection profiling by the NGRI. A zone of high gravity (0 to > 4 mgal) to the east of the Delhi fold belt is due to the presence of upthrust granulite lower crust (Sandmata Complex). The ADFB and the BGC wrap around the Bundelkhand massif and they show anticlockwise swing in their trends. Is this swing related to dextral movement along the northern NSL and to indentation of the Bundelkhand massif into the BGC-ADFB terrains in Rajasthan? A narrow and linear zone of gravity low to the west of the Delhi fold belt might represent an anatectic granitic terrain (Eripura Granite) related to Neoproterozoic Delhi subduction. This zone might also mark an Andean-type western margin of the Delhi fold belt. Farther west of this zone, the Marwar terrain in western Rajasthan shows

prominent gravity high, despite the fact that a number of sedimentary basins (end-Neoproterozoic Marwar sequence, and Mesozoic-Cenozoic sequences) have developed in this terrain. Does this imply that the continental crust in the Marwar terrain has been attenuated because of extension during rift-related Malani volcanism (ca. 750 Ma) and subsequent sedimentary basin formation?

The patterns depicted by the gravity image can be better understood and interpreted, and the questions posed here better addressed if an aeromagnetic image map of India is prepared and studied along with the gravity image.

S. SINHA-ROY

*Birla Institute of Scientific Research,
Statue Circle,
Jaipur 302 001, India*

Response

I thank Sinha-Roy for his keen interest and critical appraisal of the gravity image of India published in *Current Science*. He pointed out several interesting features of the gravity image that were not mentioned by me. My main intention was to show the visual advantage of

the colour image rather than the conventional contour map. Obviously, the questions raised are trivial and are directed to the scientific community in general. A lot more geophysical and geological data pertaining to the individual geological provinces need to be examined to answer these questions; and of course, the aeromagnetic image may be of great help.

H. V. RAM BABU

*National Geophysical Research
Institute,
Hyderabad 500 007, India*

NEWS

World conference on science

An end-of-the-millennium mega event concerning science, jointly sponsored by UNESCO and the International Council for Science (ICSU), was organized at Budapest from 26 June to 1 July 1999. The aim of this conference was to bring together representatives of the scientific community, policy makers, government officials and non-governmental organizations, to take a comprehensive view of the achievements of modern science (including technology) and to establish new guidelines for science policy for the next century, with a view to developing a new social contract for science. The conference was planned by a very distinguished International Scientific Organizing Committee and its preparations extended over two years. Two draft documents, 'World declaration on science and the use of scientific knowledge' and 'Science agenda - Framework for action' were widely circulated well in advance for detailed discussions, debates, comments and suggestions by the concerned organizations globally. For this purpose a series of regional conferences were held and their proceedings and recommendations were submitted to the International Organizing Committee for consideration.

One such regional conference was held at the National Institute of Ad-

vanced Studies, Bangalore, in January 1999. It appears that these inputs from all over the world were duly considered and made use of to modify the draft declaration, several versions of which were circulated from time to time preceding the Budapest Conference. On behalf of the Government of India, the Department of Science and Technology was assigned the responsibility of providing studied responses in advance and ultimately present the same during the Conference. India was a member of the Drafting Committee and was duly represented by an official delegation led by Murali Manohar Joshi. There were a number of others from India who participated in their individual capacity as invited speakers, chairpersons of various thematic meetings and 'forums' which dealt with diverse subjects like 'The nature of science', 'The universal value of fundamental science', 'Science in response to basic human needs', 'The gender mainstreaming in science and technology', 'Science for development', 'Science education', etc. on one hand and 'The biological revolution and its implications for health', 'Science and energy', 'Joining force for sustainable development' to name a few, on the other.

The last two days were devoted to the formal presentations by the leaders of

the country delegations, nearly 120 of whom participated. It was expected that the final declaration and the agenda-framework for action would be ratified by the respective countries like any other UN declarations.

The stated purpose of this Conference could be gleaned from some of the statements made by the key players involved in organizing it. Maurizio Iaccarino, Assistant Director General, UNESCO, felt, 'We need now a new commitment of politicians to science, and of scientists to society. Our idea is to put scientists and politicians together to discuss these issues'. Jean-Francois Stuyck-Taillandier, Executive Director, ICS(U) wished, 'to try to increase the understanding of science on the part of policy makers'. However, the Director General of UNESCO, Federico Mayor had more ambitious expectations: 'One major purpose of the meeting will be to see that the benefits of science go primarily to all those who have hitherto been unreached'. He hoped that, this meeting, the first at this level for 20 years, would enable 'Scientists, decision makers and other stake-holders to address the major issues at the interface between science and society together and negotiate a new social contract'. For the President of ICS(U), Werner Arber, the subtitle of the conference