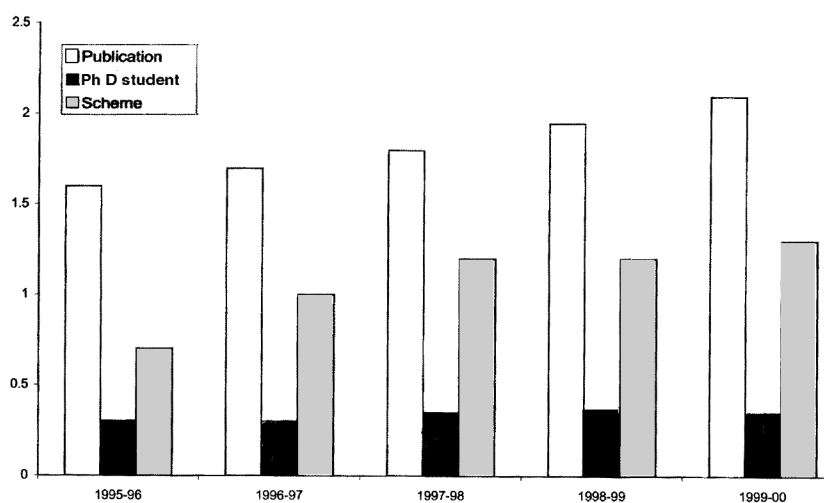


Table 1. Decreasing trend in the number of faculty members, research students and journal subscription

Year	Number of faculty members (No. of sanctioned posts = 72)	Number of research students and postdoctoral fellows	Library		
			Grants (rupees in lakhs)	Expenditure for books and journals (rupees in lakhs)	Number of journals subscribed
1997–1998	63	198	40	37.27	59
1998–1999	60	171	40	56.72	113
1999–2000	54	169	20	2.28	16
2000–2001	53	120	25	16.64	34
2001–2002	50	125	No budget allocated so far		0

**Figure 1.** Number of publications, Ph D students and schemes per faculty member.

tute. This is evident from the declining numbers of the faculty and research students, as well as journal subscriptions at the library (see Table 1). As many as thirty per cent of the academic positions are lying vacant and subscriptions to all journals in the library have stopped. From 1993, the institute provided a meagre start-up fund of rupees two lakhs to each new faculty. This has completely stopped since 2000. The Internet/e-mail facilities require upgrading and there are frequent breakdowns of the system. For

lack of funds, even repair of essential facilities like cold rooms, equipments and lab spaces cannot be undertaken. This has led to a general feeling of demoralization all around. The financial crisis has also resulted in a huge and inordinate delay in the utilization of extramural research funds and execution of funded projects, pushing us further behind. With utter dismay we note that nobody appears to be concerned about the miserable state of affairs prevailing since 1998 while we, the scientists, have been suffering. The

existing institutional authorities have failed to take any meaningful initiative to solve this problem. The institute is without a permanent Director for well over a year, compounding the problems and adding to the gravity of the situation.

In spite of these trying conditions, we have so far performed to the best of our abilities and at par with other premier research institutes in the country, as is evident from the number of research projects we have attracted, the number of Ph Ds produced and the number of research papers published (see Figure 1). However, our endurance has reached its limits and it is difficult for us to remain silent any longer. With no signs of any redressal in the near or distant future, we, the scientists of the Bose Institute are alarmed. Scientists, crippled by the lack of essential research infrastructure, cannot function in a meaningful manner. It is our general feeling that the institute is rapidly approaching a point of no return.

Bose Institute, a significant part of the history of India, is also a part of our heritage. We write this letter to bring to the notice of our fellow scientists all over the country, our plight and helplessness at this rapidly deteriorating situation in our institute. We should not be silent spectators as the legacy of Acharya J. C. Bose, his 'gift to the nation', is allowed to wither away due to the persistent indifference of the powers that be.

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On scientific re-evaluation of traditional herbal medicine

This is with reference to the correspondence of Kaushal Kumar and Singh (*Curr. Sci.*, 2001, **81**, 231) arguing for the preservation of cultural heritage of ethnoherbology and consideration for the traditional methodology of drug preparation during their scientific evaluation. We

would like to cite a couple of observations made during our efforts to document the medical ethnobotany of coastal Karnataka which appears to be relevant to the topic and thereby to stress the need for re-orientation in the objectives of scientific verification of traditional views

and evidences from an inspiring book on the science of ethnobotany by Balick and Cox¹.

We are of the opinion that the modern scientific methods of verifying the efficacy of traditional herbal cures are to be better called 're-evaluation' efforts, because

along with Balick and Cox, we also believe that every time a traditional healer administers a medicinal plant to a sick individual, the efficacy of the indigenous tradition is empirically tested and evaluated. Only the context of the trials performed by the modern scientists and by the traditional healers may be different.

So far, such re-evaluation of traditional medicinal plants was focused mainly to discover new drugs for western medicine. Isolation and characterization of single-activity bioactive principles or 'magic bullets' from plants against disorders predominantly associated with western lifestyles such as cancer, AIDS, cardiovascular and nervous diseases, etc. was the ultimate aim. The driving force undoubtedly is the multimillion dollars-worth market potential tagged to such products. An analysis of the total money spent on drug development in the United States indicates that 26% of it goes for cardiovascular drugs, 18% for cancer, and 14% each for nervous disorders and antibiotics¹. But the surprising fact is that these categories of diseases hardly find a place in the indigenous pharmacopoeia where the priorities have been easily detectable ones such as complaints of the gastrointestinal and urinogenital systems, skin diseases, etc. In fact, few indigenous languages have a word for cancer, leukaemia or hypertension! In the ethnomedicine of coastal Karnataka, major diseases treated are those of the skin

(20%), digestive system (18%) and urinogenital system (15%)². The reluctance of modern scientific approaches to recognize this basic difference in the priorities of the western demand which it owes to fulfil and that of the traditional practices from which it seeks guidance, is the major reason for the recorded low success rate in this field. In spite of about five decades of such bio-prospecting activities, there are only 89 plant-based drugs currently prescribed in the western medicine¹, discovered by studying traditional medicinal knowledge which globally involves more than 20,000 species of plants³.

Another limitation of the modern methods of re-evaluation of herbal remedies is with regard to the multiherbal preparations. Traditional practices are abound with such compound formulations whose curative effect seems to be resting on the principle of co-operative action of many active ingredients, each targeted against a particular symptom of the disease under treatment. For example, we have recorded 24 multiherbal methods of treatment for herpes – a skin inflammation caused by viral infection and associated with severe burning sensation. An analysis with the help of published literature revealed that these compound preparations involve a combination of herbs claimed to be possessing mainly antimicrobial, anti-inflammatory, wound-healing and coolant properties². These

drugs are prepared either by grinding (extracting?) with lime juice, rice-washed water or the juice of pericarp of tender fruits of a local variety of coconut called 'gendali'. Any modern attempts of re-affirming the scientific basis of these remedies need to be holistic and flexible enough to consider all these aspects, rather than just fractionating the involved herbs individually with different chemical solvents and looking for those elusive antiviral or anti-inflammatory compounds in them.

1. Balick, M. J. and Cox, P. A., *Plants, People and Culture – The Science of Ethnobotany*, Scientific American Library, New York, 1996.
2. Bhandary, M. J., Ph D thesis, Mangalore University, 2001.
3. Vedprakash, *Ethnobotany* 1998, **10**, 112–121.

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Saraswati – the ancient river wrongly identified?

Reading the article 'Saraswati – the ancient river lost in the desert' (*Curr. Sci.*, 1999, **77**, 1054–1060) by A. V. Sankaran, I found myself in a bind. I have been concerned with this subject intensely for the last half a century. I have now come to the conclusion that Saraswati is not an extinct river at all. It is extant and very much alive, but outside India, in the Balkhash region.

My difficulty is very simple. 'How many rivers can there be, qualifying for the title Vedic Saraswati?' Obviously the answer would be *only one*. Since I claim to have found the answer, I give some tests that the so-called Indian Saraswati

and its protagonists should be able to try and satisfy. This is independent of the fact that there is a controversy about the identity of Saraswati. My solution passes all these tests successfully.

The first point is why is it called Saraswati? By definition, it should meet a lake and a sea. My solution says, 'The Balkhash is a peculiar lake. Its water is potable where it meets the river Ili (Saraswati) and salty at its eastern end, where it is at sea. It is an inland sea.' These are not normally met with, except in North Asia. River Ili first meets the sweet end of the lake, thus satisfying the condition of meeting the lake and then

along with this lake meets the sea. The hypothetical Indian Saraswati might meet the sea, but what about the lake?

Saraswati has an alternative name, Sharada. How do we explain it? Sharada is a goddess of education. A suitable explanation for it is in order. For 'my' solution, river Ili has formed a delta where it meets the lake Balkhash. This area consists of stands of reeds called shar. These shar grasses mature just before the onset of winter. Thus the area, which is the mouth of river Ili (read Saraswati) is the giver of shar, Sharada. It is thus at once the name of the pleasant autumn and also of the river mouth which