



**Testing and Validation of Indigenous Knowledge: The COMPAS Experience from Southern India.** A. V. Balasubramanian *et al.* (eds). COMPAS and Centre for Indian Knowledge Systems, No. 30, Gandhi Mandapam Road, Kotturpuram, Chennai 600 085. 2011. 193 pp. Price: Rs 200.

It is pertinent to review this book for *Current Science* because it proposes a world view and method that deserve the attention of scientists in this country. The book is a collection of articles about systematically validating indigenous knowledge in agriculture and medicine, and harnessing it to solving livelihood and health problems of the people in the region. This seemingly simple task, however, is backed by a profound vision of the purpose of scientific knowledge and, a method to work towards the same.

Scientific and technological knowledge with evidence from the laboratory is expert-centred, capital intensive and requires a huge technological apparatus even for elementary measurements. Often knowledge valid under laboratory conditions may be quite ineffective or even damaging in real-life situations that are characterized by constraints of different kinds. Communities living by their bodily labour and whose lives are closely intertwined with the natural habitat, such as farmers and tribals are acutely affected by these damages more than others. No doubt, laboratory science has produced spectacular results in the past century, but it need not be the only approach to the natural world. There have for centuries been and continue to be, acute investigations and experiments into natural and physical phenomena that certainly require expertise but not exor-

bitant apparatus and laboratories. Moreover, they emerge from *in situ* experiments which require some kind of link between the expert and the non-expert or user. They are based on time-tested knowledge of resources in their habitat and technologically sound ways of coping with constraints. Though not very complex, this knowledge gives greater control for the concerned social groups over their lives than top-down technologies. If indigenous knowledge has been alive and socially productive despite the two centuries of annihilation, it certainly calls for serious attention. The book under review could be understood only if there is certain openness to alternative modes of knowing the natural world and genuine curiosity about how such knowledge works.

The book is divided into three sections – an introductory section followed by a section each on the interventions by FRLHT (Foundation for Revitalisation of Local Health Traditions, Bangalore) and on agriculture by CIKS (Centre for Indian Knowledge Systems, Chennai) in the field of health and medicine. They are partners in the COMPAS (Comparing and Supporting endogenous development) network, which is an alliance of NGOs in the global south that aims at strengthening the indigenous knowledge and making it more effective for resource-poor communities far removed from the attention of the state. The aim of the edited volume is to share the field experience of the South Indian partners of COMPAS with others working with indigenous knowledge.

The first section briefly introduces the objectives of the South Indian partners of COMPAS followed by the essay, 'Is there an Indian way of doing science?' by A. V. Balasubramanian. It explains distinct characteristics and methodology of indigenous knowledge in the Indian subcontinent. Even when a high degree of professionalism is attained as in the classical medical texts of India, the social organization of knowledge shows that the folk healers and ordinary people also possessed great depth of medical knowledge, a situation quite different from what one would expect from a layperson or a non-expert. This is a remarkable characteristic of indigenous medicine in India in contrast to allopathy, where the layperson is a passive recipient of expert knowledge. Traditional systems of knowledge in India had a broad social

base and a deeper symbiotic relation between expert and non-expert knowledge than in other civilizations. Therefore, Balasubramanian argues that in a region where several indigenous knowledge systems have thrived for centuries together, we have to take folk knowledge more seriously than in the West.

The second section sets out the FRLHT experience in documenting and validating medical practices in the village communities in South India. It covers primary health care, ethno-veterinary practices, traditional orthopedic practices and the management of malaria. These specialties were the stronghold of traditional medicine and have been codified in medical classics. Studies show that allopathic medical care in India is highly inadequate with about 7 physicians per 100,000 population, whereas folk healers are quite numerous and are sought by the people who also support them. FRLHT's effort has been to document the treatment methods and herbal medications administered by folk healers for common and most frequent ailments in a locality. The next step is to verify their efficacy by follow-up study of a sample of patients, desk research into Ayurvedic/Siddha medical texts, validation by the village community and by an allopath. Willing folk healers are short-listed, and each remedy they practice is numbered and validated in this fashion with the aid of well-tested protocols, checklists and questionnaires which are provided in the appendix of the book.



*Asparagus racemosus* – Fleshy tubers.

## BOOK REVIEWS

A multi-staged method has been developed to validate medical knowledge through the Documentation and Assessment of Local Health Traditions (DALHT) format and the verified remedies are entered in the community register in the presence of the village Sarpanch. Further, the herbs necessary for the verified remedies are cultivated in the herbal nursery and distributed to villagers at a cheap price. In the case of malaria, herbal decoction (kashaya) was distributed to a randomized study group for three months against a control group in a village with high record of the disease. Out of 13 incidences, there was 1 in the study group against 12 in the control group, and in another village the proportion was 1 and 6 respectively. The effort only covers primary health care; chronic and acute diseases will have to be referred to the medical facility. Such evaluation serves to encourage sound medical practices and eliminate the unsound ones. Efficacious traditional practices to manage malaria, that is a major public health problem, are disseminated from one locality to a larger population. Similarly, workshops have been conducted for folk healers to assess their bone-setting practices and streamline them.

FRLHT is one of the very few institutions that has developed a scientific methodology to validate knowledge *in situ*; this is valuable because the indigenous medical skills serve a large section at very low costs and folk healers do not receive any attention in health policy. Throughout the world, governments are including alternative medicine in their health care, and allopathic doctors are seeking to qualify themselves in Ayurveda or Chinese medicine in Europe and the US. Alternative medical practitioners trained under apprentice systems are also allowed to practice medicine for primary health in several countries. It is high time that the medical and scientific community in India shows curiosity about the indigenous systems of medicine.

The third section of the book covers investigations on indigenous agricultural practices conducted under the aegis of CIKS, by agricultural botanists, plant pathologists and entomologists. CIKS does for agriculture what FRLHT does for medicine. It not only identifies effective practices, but also strives towards the larger goal of preserving genetic diversity through documentation of tradi-

tional seed varieties and making them available to the interested farmers for propagation. The first essay in the third section reports a study of ten traditional rice genotypes, their productive and morphological characteristics (totally 13 traits). Results lead to the identification of 3–4 rice genotypes for further research as they showed superior performance in most of the traits studied. The next article reports an investigation into the resistance of 31 traditional rice varieties and four cultivars to sheath blight disease, out of which two tolerant types were identified. The study also led to significant conclusions about plant characteristics and disease resistance. Another investigation of traditional treatment of fusarial wilt in tomato crop conducted both in the laboratory and the field shows how the seeds soaked in 100% cow's milk for 8 h and fumigated with sweet flag powder for 5 min reduced disease incidence compared to groups that received reduced concentration of the same and those that received conventional chemical treatment with carbendazim. Another study in the collection evaluates different local practices to eliminate rodents.

The last summing-up essay in the volume is almost a repetition of the introductory essay and could have been avoided. Even if the volume is intended to present the South Indian experience, a discussion of the work of COMPAS partners in other countries would have helped contextualize issues about indigenous knowledge today in a broader perspective. The volume presents a rigorous methodology for validation of indigenous knowledge and would benefit NGOs, students of agriculture, animal husbandry and medicine, and extension workers in government departments of agriculture and health as well as anthropologists.

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**la vintage métallurgie: 60 Years of Marriage of Science to Industry.** CSIR-National Metallurgical Laboratory, Jamshedpur. 2011. 411 pp. Price not mentioned.

The book under review is an account of 60 years' journey of the National Metallurgical Laboratory (NML), Jamshedpur. The aim of establishing NML was to develop the technologies for metallurgical industries required for the country through fundamental and applied research, including pilot-scale development. The laboratory has strived to achieve excellence through the visionary leadership of distinguished personalities and dedicated scientists and staff. There was a need to have all these achievements along with significant real contributions documented properly so that it will guide the policy makers and the younger generation to take it to newer heights. Therefore, it is an apt time to bring out all the facts of the past in an artistic fashion so that it becomes inspiring and interesting as well. Thus, the publication of this book is appropriate and will serve as a good contribution and guide towards the marriage of science and industry.

There are nearly 31 chapters with an attractive, rather romantic title coinciding with important concepts of metallurgy and representing different eras of the evolution of NML. The first chapter starts with the scenario of metallurgical industries in India during the pre-independence era, and with the creation of the Council of Scientific and Industrial Research (CSIR) and subsequently NML coming under CSIR in 1946. After a systematic and chronological description of developments amalgamated with emotions and visions of various leaders and distinguished personalities, it ends with an articulated vision for the future. The creative writing along with anecdotes and photographs has made this book a valuable document. The classifi-