

## Herbal drugs\*

In the last few decades there has been an exponential growth in the field of herbal medicine. It is getting popularized in developing and developed countries owing to its natural origin and lesser side effects. In olden times, *vaidyas* used to treat patients on individual basis, and prepare drug according to the requirement of the patient. But the scene has changed now; herbal medicines are being manufactured on a large scale in mechanical units, where manufacturers come across many problems such as availability of good quality raw material, authentication of raw material, availability of standards, proper standardization methodology of single drugs and formulations, quality control parameters, etc. All these issues were discussed in the seminar. Harish Padh (Director, PERD) in his inaugural speech introduced the theme of the seminar and emphasized on these points and their significance in the present era.

In his talk on 'Herbal drug industries – India and abroad', D. B. A. Narayana

(Dabur Research Foundation, Ghaziabad) discussed about the Indian contribution in international herbal market and emphasized on novel research for capturing as well as to remain in the market. 'Phytochemical standardization of herbal drugs and highly processed materials in herbal formulation', was discussed by S. Satokopan (formerly at Food and Drug Laboratory, Baroda). The importance and challenges of conducting clinical research in herbal drugs, simple bioassays for biological standardization, pharmacological and toxicological evaluation, toxic herbal drugs in use, various animal models for toxicity and safety evaluation, were dealt with in detail by various experts in the field. S. P. Adesara (FDCA, Gujarat) focused on legal and regulatory aspects of herbal drugs while information related to revised schedule T for Good Manufacturing Practices for herbal preparations was given by K. M. Patel (FDCA, Gujarat). The buzz words WTO, IPR & Patents in herbal sector were also focused in the seminar.

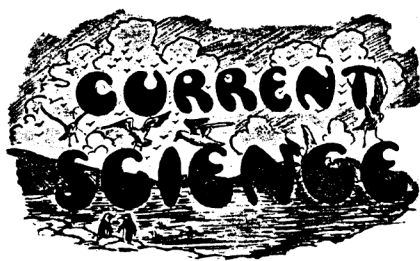
Ambiguity of our own system of medicine – the Ayurveda, is reflected in the interpretation of names and description of drugs given in the books like *Charaka*

*Samhita* and *Sushruta Samhita*, etc. Due to lack of scientific names in the original texts, under one name, different plants are known in different parts of the country as per the description, which makes the drug controversial, e.g. Jivanti, Brahmi. 'The controversial drugs in Ayurveda', plant biotechnology, significance of plant tissue culture in production of authentic raw materials as well as in conservation of biodiversity, biotransformation in developing therapeutic molecules, natural products in drug discovery and development were some of the topics discussed during the seminar.

In the concluding session, Tamal Sarkar (Co-ordinator, UNIDO) expressed his views regarding the significance of the seminar and also about the problems faced by small scale industries which require a common platform like PERD. In this connection, Harish Padh told about the facilities available at PERD which can be made available to small scale industries.

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\*A report of the seminar on 'Herbal drugs: Present status and future prospects', held on 7 and 8 April 2001, at B.V. Patel PERD Centre, Ahmedabad.



Vol. IV] JANUARY 1936 [No. 7

### The role of science in the recent progress of medicine\*

U. N. Brahmachari

How complicated is the mechanism of chemotherapy is shown by the fact that a

\*Presidential address, 1936, 23rd Indian Science Congress, Indore.

slight alteration in the constitution of a compound may bring about a complete change in its physiological properties. This is well exemplified in the preparation of the various amino-quinoline derivatives for anti-malarial purposes. A slight change in the constitution of these compounds leads to a complete disappearance of these properties. 6-amino-quinoline and 8-amino-quinoline have no action on paramoecia in strength of 1 : 4000. The introduction of OH into 5-amino-quinoline and quinoline-8-glycineamide raises their toxic action on paramoecia to a remarkable degree and the methylation of 6-oxy-8-amino-quinoline by replacement of H of OH by CH<sub>3</sub> reduces its action on paramoecia to nil (Brahmachari and coworkers). Diethylmonosulphone is without hypnotic action, while both dimethyl-sulphonedimethyl methane and the isomeric diethyl sul-

phonedimethylmethane (sulphonal) are strongly hypnotic.

One of the most terrible of tropical diseases, so far as certain parts of India are concerned, is *kala-azar*. Antimony, which was once banned to such an extent that the graduates in medicine of the University of Heidelberg had to swear never to use it, has now been found to be its specific. By the introduction of organic antimonials in its treatment, the mortality of this disease has been reduced from 99% to about 1 or 2% in uncomplicated cases. The terrible nature of this disease in its epidemic form when it ravaged Bengal in the Seventies was well described by a contemporary writer as follows: 'The devastation of the epidemic has a very sad tale to tell. Countries that once smiled with peace, health and prosperity, have been turned into hot-beds of disease, misery, and death. Villages that

once rang with the cheerful, merry tone of healthful infants, now resound with loud wailings and lamentations. Huts, which offered too little space for their occupants are left without a tenant. The skulls of human beings now strew the fields at every few yard's distance. The fell disease has mocked every human effort, and absorbed in its powerful grasp, day by day and inch by inch, every blessed spot which once used to be prized for its salubrity' (Roy).

The next step in the treatment of the disease was the introduction by the speaker of the intravenous administration of metallic antimony in a state of fine

subdivision, which was attended with remarkable benefit. It was observed that when injected intravenously the particles of antimony are picked up by the same cells in the spleen as those that harbour the parasites of *kala-azar*, that the two contending agents thus come in closest contact with each other in these tissue cells, and that the fight ends most remarkably in the complete destruction of the parasites in the speediest way.

The next further advance in the treatment of *kala-azar* was the introduction of certain organic compounds of antimony and the use of these compounds in *kala-azar* infection has been the subject of the

speaker's research for many years, and in 1920 some of them were prepared for the first time in India in the Calcutta Campbell Hospital.

Early in 1921, the speaker discovered an urea antimony compound for the treatment of *kala-azar*. Its introduction and his other researches on antimonial compounds opened up a new vista in the treatment of the disease in India by means of therapeutic organic antimonials, just as the discovery of salvarsan led to the introduction of organic arsenicals in the treatment of spirochaetal diseases. This urea compound was named 'urea stibamine'.

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