

## Abstracts of Articles in English

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### **Effect of Nematodes on Some Aromatic Plants — A Review**

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**Abstract**—Nematodes infect a number of medicinal and aromatic plants which are invisible to naked eyes. Therefore, scientists could not notice their presence but they cause a lot of damage to the plants since they normally infest the root systems. The losses caused to aromatic plants are innumerable, therefore a detailed account of these nematodes infecting the aromatic plants and their management has been presented in this review article.

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### **Role of Biological Sciences in Modern Defence Systems**

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**Abstract**—The role of biological sciences in defence system is outlined. The effect of biological warfare is sketched.

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## Algal Biodiversity of Polluted Waters of River Gomti — A Study

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**Abstract** — A study on algal biodiversity at different polluted sites of river Gomti of Lucknow is reported. A total 23 algal forms have been observed, out of which sixteen are diatoms of *Bacillariophyceae*, four are green. Algae and the rest three are blue-green algae. It has been found that green algae, being pollution-sensitive form is not present at site-I of Gomti river, where the level of pollution is low or nil. Sites II and III are polluted areas dominated by pollution indicators of diatoms. As a pollution resistant alga *Oscillatoria* has been found at polluted as well as unpolluted sites of the river Gomti.

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## Status of Acid Rain in India and Study on Rainwater Composition at Gopalpura (Agra)

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**Abstract** — The presence of some strong ( $\text{H}_2\text{SO}_4$ ,  $\text{HNO}_3$  and  $\text{HCl}$ ) and weak acids (acetic and formic acids) in atmosphere causes acidic rain. Industrialization and urbanization have resulted in rapid increase in  $\text{SO}_2$  and  $\text{NO}_x$  concentrations in atmosphere. These species ( $\text{SO}_2$  and  $\text{NO}_x$ ) react with different atmospheric radicals and are converted to  $\text{H}_2\text{SO}_4$  and  $\text{HNO}_3$ . Deposition of these acids results in acidification of soil, ground water and lakes and causes adverse effects on human beings both directly and indirectly. In India, pH of rainwater varies from 4.8 to 7.4 which signifies both acidic and alkaline nature of rainwater. The pH of rainwater is 4.5 and 4.8 at Chembur (Mumbai) and Korba (M.P.), respectively. The pH values are high ( $> 7.0$ ) at Srinagar, Bikaner, Allahabad, Ahmedabad, Jodhpur and Amritsar while comparatively low (pH 6.0-7.0) at Delhi, Bhopal, Gopalpura (Agra), Vishakhapatnam, etc. At places like Nilgiri, pH is 5.3 and in Tuticorin and Trivandrum pH is 5.7. As continental air masses (natural source) influence rains in India, hence the pH of rainwater is alkaline in nature in some regions. The acidity of rainwater is neutralized by alkaline ions ( $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$  and  $\text{NH}_4^+$ ). In rainwater of Gopalpura, the neutralization factors for  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$  and  $\text{NH}_4^+$  have been found to be 0.80, 0.53 and 0.89, respectively. Hence,  $\text{Ca}^{2+}$  and  $\text{NH}_4^+$  play an important role in neutralizing acidity. Similar observations have been found at Delhi and Agra.

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## **A Study on Morphological Variabilities in Wild Strains of *Rosa moschata* and Their *ex-situ* Conservation**

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**Abstract** — A number of wild roses have been found to grow in and around Palampur of Kangra district of (HP) and one of these is *Rosa moschata* J. Herm. A survey has revealed the presence of six strains of *R. moschata* varying in their morphological appearance. All these strains, collected from their wild habitat, are being grown in the germ plasm bank of the Institute. A study on these strains has revealed the morphological variations in terms of number of thorns, bud size, flower colour, number of fruits per branch, number of seeds per hip, etc.

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## **Acoustical Studies of Binary Mixtures of 1,2 –Dichloro-benzene and 1-Alkanols**

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**Abstract** — Molar sound velocity, molar volume and available volume have been computed and interpreted in terms of molecular interaction occurring in solutions of 1,2-dichlorobenzene and 1-alkanol. Ultrasonic velocities evaluated from Nomoto's and ideal liquid mixture relations have been compared with experimental values.

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## **Indian Science Congress 2000 — A Report**

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**Abstract** — A report on the 87<sup>th</sup> Session of the Indian Science Congress Association, held under the General Presidentship of Dr R. A. Mashelkar, FRS, a renowned chemical engineer and Director General of Council of Scientific & Industrial Research, New Delhi, India, at Pune during 3-7 January 2000, is presented. The names of all the Sectional Presidents with topics of their Presidential Addresses are tabulated. The main points of the inaugural addresses — Developed Indian Science for India's Accelerated and All-Round Development — of the Prime Minister of India, Shri Atal Bihari Vajpai, are highlighted. The main points of the speech of Prof. Murli Manohar Joshi, Minister of Human Resource Development, Science & Technology and Ocean Development, Govt. of India, entitled "Science and India in the Next Millennium" are presented. The points emphasized by Dr R.A. Mashelkar in his Presidential Address are enumerated. The focal themes are listed. The names of ISCA Awardees are tabulated. The titles of various symposia held under different sections of ISCA are given. The next session will be held at New Delhi under the General Presidentship of Dr R. S. Paroda, Director General, Indian Council of Agricultural Research (ICAR), New Delhi, India.