

Tête-à-tête with Dr. B. Vasantharaj David

**HUMBLE, ILLUSTRIOUS AND
DILIGENT ENTOMOLOGIST WHO
SERVED ENTOMOLOGY FOR 60
GLORIOUS YEARS**



Dr. B. Vasantharaj David, born on 17th November 1935, at Insein (Myanmar) has 60 years' experience in the field of Entomology especially taxonomy and crop protection. He did his B. Sc. (Ag.) from Madras University in 1956 and obtained M.Sc. (Ag.) degree in Agricultural Entomology from the same University in 1961. Later Dr. David obtained his Ph.D. from the Tamil Nadu Agricultural University, Coimbatore in 1972 with Entomology as specialization. He was awarded the degree of Doctor of Science (D.Sc.) by the University of Madras in 1995 for his contributions in the taxonomy of the Aleyrodidae of India, Sri Lanka and Myanmar. He has taught Agricultural Entomology in the Agricultural College & Research Institute, Coimbatore and has served the State Department of Agriculture, TNAU, R & D of pesticide companies, private research organizations, etc.

He has visited various countries such as Japan, United States of America, United Kingdom, the Netherlands, France, Philippines, Singapore, Korea, Sri Lanka, Germany, Mexico, Switzerland, Canada, China, Belgium, Indonesia, Malaysia and

Thailand in connection with his official duties and presentation of papers in international conferences.

Dr. David is a Fellow of the National Academy of Agricultural Sciences, the Royal Entomological Society, London, the Academy of Sciences for Animal Welfare, the Entomological Society of India, the Plant Protection Association of India, the Entomology Academy of India, the Society for Biocontrol Advancement, the Applied Zoologists Research Association, the National Academy of Biological Sciences, the Association for Advancement of Pest Management in Horticultural Ecosystems, the Society of Plant Protection Sciences, the Gujarat Science Academy, and the Madras Science Foundation.

Dr. David is recipient of several prestigious awards and recognitions, which include Dr. K. C. Mehta Memorial Award for outstanding contributions in Plant Protection

from the National Academy of Agricultural Sciences; “Distinguished Scientist Lifetime Achievement Award in Toxicology” of Society of Toxicology, India; Late Shri Gyan Prakash Memorial Award of the Society of Plant Protection Sciences; Pearl Foundation Outstanding Research Award in Agricultural Sciences 2016; NABS Leadership Award 2016; Life time Achievement Award in Agriculture and Allied Sciences 2016 by the Samagra Vikas Welfare Society, Lucknow; the Friendship Forum of India, New Delhi presented Bharat Excellence Award, Leading Educationist of India Award and Global Arch of Excellence Award on 24th February 2019. He is also recipient of “Outstanding Plant Protection

Scientist” Award at the International Plant Protection Congress (IPPC – 2019) held at Hyderabad on 13th November 2019; Bharat Ratna Mother Teresa Gold Medal Award for his outstanding individual achievement in Agricultural Sciences and Taxonomy and Toxicology, and Agri P. Kamalanathan Award for Scientific Contribution in Entomology by Tamil Nadu Agro Technologists’ Forum (TANSAF) during its 27th Annual Meet. Dr. David is President of Applied Zoologists Research Association (AZRA) since 1994. Another noteworthy contribution is establishment of “Dr. B. Vasantharaj David Foundation” in 2019 to promote science and green environment.



Dr. Kolla Sreedevi (left) interacting with Dr. B.V. David at Bengaluru

Dr. Kolla Sreedevi, Associate Editor of IE, interacted with Dr. B. Vasantaraj David and the excerpts of the interview are presented below:

Dr. K. Sreedevi (KS): Sir, kindly brief about your journey and the milestones attained in your illustrious career

Dr. B. V. David (BVD): I started my career after obtaining B.Sc. (Ag.) degree in 1956 from Madras Agricultural College, Coimbatore and since then served in various capacities as Agricultural Demonstrator/ Agricultural Extension Officer/ Plant Protection Assistant (Entomology), Madurai 1956-1959; Assistant Lecturer/ Lecturer in

Entomology, A.C.&R.I., Coimbatore 1961-1968; Senior Technical Officer (Agrochemicals), Tata Fison Industries Ltd., Coimbatore 1968-1970; Entomologist, Ciba Agrochemical Research Centre, Koyarambedu, Chennai 1970-1971; Research Officer, Entomology Research Institute, Loyola College, Chennai 1971-1973; Assistant Professor (Entomology), TNAU, Coimbatore 1973-1975; Product Development Manager (Agrochemicals), Voltas Ltd., Mumbai 1975-1981; Director, Fredrick Institute of Plant Protection & Toxicology (FIPPAT), Padappai 1981-1987; Executive Director (Product Development), Rhone Poulenc Agrochemicals (I) Ltd., Mumbai 1987-1991; Director, Coromandel Indag Products (I) Ltd., Chennai and Professor of Entomology, FIPPAT, Padappai 1991-1994; Director, Jai Research Foundation, Valvada (Gujarat) 1994-1999; Director, Coromandel Products (I), Ltd, Chennai 1999-2000; Executive Director, Sun Agro Biosystem Pvt. Ltd., & President, Sun Agro Biotech Research Centre, Chennai 2001-2010; Consultant-GLP, Vanta Bioscience, Gummidipoondi, Chennai 2010-2013; Test Facility Head, Centre for Toxicology, Sri Ramachandra Medical University, Chennai 2010-2013; Consultant – GLP, Rotam Research Laboratory, Kunshan, China 2005-2017; Chairman, Scientific Research & Academic Board, International Institute of Biotechnology and Toxicology, Padappai 2013-2020.

My life time contribution spanning over sixty years has been in the fields of Entomology, crop protection and toxicology which led to enrichment of our knowledge of the bio-ecology and control of several agricultural pests, development of two research institutes, viz., Fredrick Institute of Plant protection and Toxicology, Padappai

(1981-1987) and Jai Research Foundation, Valvada, Gujarat (1994-1998), founding of biotechnology companies, Sun Agro Industries India in 1992 and Sun Agro Biosystems Private Ltd. in 2001 and further served as President of Sun Agro Biotech Research Centre for manufacture and marketing of biocontrol products promoting Integrated Pest Management (IPM) concept, taxonomy of whiteflies of India including Andaman & Nicobar Islands, Myanmar and Sri Lanka. Apart from describing around 250 new species, discovered for the first-time occurrence of species of the subfamily Aleurodicinae in India. I have published 24 books and 359 research papers. Two of my books, "*General and Applied Entomology*" and "*Elements of Economic Entomology*" are widely referred by students, researchers and pesticide industry personnel and prescribed as reference books for civil services examinations. Guided 11 scholars for Ph.D. and 16 for M.Phil. of the University of Madras.

As Director of Fredrick Institute of Plant Protection & Toxicology, Padappai (Tamil Nadu) (1981-1987) and Jai Research Foundation, Valvada (Gujarat) (1994-1998), I developed research facilities for agricultural sciences, toxicology, and product chemistry meeting international compliance of GLP. This facilitated pesticide industry to introduce a number of new pesticides in the country.

My initiative when I was Director, Jai Research Foundation in conducting an International Symposium on Good Laboratory practice in collaboration with DST culminated in establishment of National GLP Compliance Monitoring Authority in 2002, which has become a full member of OECD since March 2011. Today

*“Taxonomy is a fascinating field.
You derive immense happiness and
satisfaction while discovering many
new species/genera which remain
for ever in posterity”*

there are 50 laboratories certified as GLP compliant. I was a GLP consultant to Rotam Research Laboratory, Kunshan, China (2005-2017) and 3 Indian laboratories. Has wide experience in pesticides product development, product stewardship and registration of pesticides in the country and world over.

KS: Can you please narrate about turning points in your journey, if any

BVD: There have been many turning points. The first was resigning state government job as Lecturer in Entomology, Coimbatore and joining industry R&D of Tata Fison Industries Ltd., Coimbatore in 1968.

The second one was when I lost my job as Entomologist with Ciba Research Centre, Kayarambedu in 1971, Prof. T. N. Ananthkrishnan offered me to join his PL 480 scheme on Thysanoptera in Entomology Research Institute, Loyola College, Chennai. It was during this time I completed my work for Ph.D. thesis on whitefly taxonomy. The most memorable thing was Dr. K. K. Nayar of Kerala University and Dr. Ananthkrishnan requested me to join them in the book project on entomology with Tata Mc-Graw-Hill Co., New Delhi and during the period with ERI the manuscript was completed and submitted to the publisher.

The third occasion has been getting back to TNAU as Lecturer in Entomology (1973-1975) and my decision to get back to industry and served with Voltas Ltd., Mumbai, Coromandel Indag Products (India) Ltd., Fredrick Institute of Plant Protection & Toxicology, Padappai and Rhone Poulenc Agrochemicals (India) Ltd.

The fourth occasion has been an invitation from United Phosphorus Ltd group to head, Jai Research Foundation, Valavada, Gujarat.

KS: Can you please tell us the driving factors/force behind taking up of Agricultural studies and research

BVD: Though I was keen to become a doctor, I was not selected and thus joined B.Sc. (Ag.) course in the Madras Agricultural College Coimbatore in 1951. After completing the course, I was appointed as Agricultural demonstrator, Oddanchatram and after one year, I was posted as Plant Protection Assistant (Entomology), Madurai. As I had passion for Entomology during my undergraduate course joined the first batch of Post graduate course in Agricultural Entomology during 1959-1961 and thereafter posted as Assistant Lecturer in Entomology, AC&RI, Coimbatore. Thereafter though I was with industry and research institutes I have been continuing my research on taxonomy of whiteflies and evaluation, registration and development of new pesticide molecules and toxicology.

KS: How did your professional career started and with what specialization

BVD: Though my career started in agricultural extension after getting qualified with a post graduate degree in Agricultural Entomology, soon my interest shifted

towards taxonomy and toxicology as narrated.

KS: What made you choose taxonomy as your specialization

BVD: My area of specialization has been taxonomic studies of whiteflies of India including Andaman & Nicobar Islands, Sri Lanka and Myanmar. I also reported on the aleyrodid fauna of Iran. When I registered for my doctoral research, Dr. S. Kanakaraj David, Professor of Entomology, AC&RI, Coimbatore suggested me to consider studying the aleyrodid fauna of India. Taxonomy is a fascinating field. You derive immense happiness and satisfaction while discovering many new species/genera which remain forever in posterity.

KS: Can you narrate about your passion towards biocontrol research

BVD: My passion towards biocontrol developed when I was Plant Protection Assistant at Madurai. There was an outbreak of a hairy caterpillar, *Laelia exclamatoris* on guinea grass. When I reared it at my home. I could collect two parasitoids viz., *Hockeria* sp. and *Tetrastichus* sp., and published in *Journal of Bombay Natural History Society*. Then during my post graduate course in 1960, visited Alanganallur in Madurai district to see outbreak of red hairy caterpillar on groundnut when there was large-scale predation of the caterpillar by the pentatomid bug, *Eocanthecona furcellata*. This was published in *Journal of Bombay Natural History Society*.

When I joined Entomology Department after post graduate degree, my main assignment was to maintain cultures of parasitoids of

black-headed caterpillar of coconut. I underwent training from August 29, 1962 to September 3, 1962 in mass multiplication technology of *Stomatomyia bezziana* on coconut, which was imported from Sri Lanka, at the Commonwealth Institute of Biological Control, Bangalore and Dr. V. P. Rao was the Head of the Institute.

Another significant contribution was a detailed study by my colleague Clement Peter for his Ph.D. degree under my supervision on the bioecology and parasitoids of the caterpillar *Diaphania indica* on *Coccinia*. Similarly, B. Krishnan studied the parasitoids of whiteflies for his Ph.D. programme. Establishment of Sun Agro Biosystem Pvt. Ltd. and Sun Agro Biotech Research Centre, Chennai was another milestone in commercialization and R&D of biocontrol agents.

KS: What is your vision in the field of taxonomy and other applied research areas?

BVD: My vision is to motivate many young scientists in insect taxonomy. It is essential that the Government of India as well as ICAR ensures further development of laboratories for identification and training of persons in insect taxonomy in the country. Zoological Survey of India, Forest Research Institute, Dehra Dun, Division of Entomology, ICAR-Indian Agricultural Research Institute, New Delhi and ICAR-National Bureau of Agricultural Insect Resources (NBAIR) must be upgraded with taxonomic wings. As regards applied research, insect physiology, ethology and ecology needs more attention and ICAR and SAU institutes enhance their capabilities by advanced training and encouraging them to

focus their research without disturbing them by frequent transfers.

KS: Your book, ‘Elements of Economic Entomology’ is considered as Bible among Entomologists, can you please narrate the inspiration behind the work

BVD: When I was appointed as Assistant Lecturer in Entomology, AC&RI, Coimbatore, we used to attend the practical classes at 6.30 a.m. and the Lecturers used to assemble the students and conduct the theory class for an hour and disperse for search of pests in the crop. The students were without any reference for study and this prompted me to prepare notes as per syllabus, cyclostyle and provide copies to students since 1964. Subsequently printed copies were made available. In 1975, Mr. Munuswami of Popular depot approached me and he took up publication of the book, “Elements of Economic Entomology” in 1975 co-authored with Dr. T. Kumaraswami. The 8th edition was co-authored with Dr V. V. Ramamurthy Ex. Professor of Entomology, IARI, New Delhi and published in 2016. The book has been a great source of inspiration as it gets updated in tune with latest developments in Applied Entomology.

KS: What are the challenges faced in your professional life?

BVD: Evaluation of aerial spray programmes when I was with AC&RI, Coimbatore in Pollachi for control of red hairy caterpillar infesting groundnut during May 1961, and when with pesticide industry, for evaluation of toxaphene, and dimethoate and combinations against cotton pests in Malaipaatti, near Kovilpatti during 1968-1969; evaluation of aerial spray of phosalone (Zolone) during November-

December 1976 at Telav, Bharuch, Gujarat on cotton in collaboration with Navsari Agricultural College and Haffkine Institute, Bombay.

As Director of the Fredrick Institute of Plant Protection and Toxicology (FIPPAT), Padappai, Tamil Nadu during 1981-87 organized and established various unique biological disciplines and undertook safety evaluation of pesticides of Indian and multinational companies, a unique venture in the country as such facilities were not readily available. As a result, many pesticides were introduced and registered by the Government of India and crops were protected from dreaded pests contributing to national economy. I was responsible for introduction of many new molecules of Japanese companies after my visit to Japan, Dow Chemical and Duphar.

The most challenging assignment was Director of Jai Research Foundation. Organized and established unique research facilities such as agricultural science disciplines (Entomology & Nematology, Plant Pathology and weed science), chemistry and toxicology. Secured a soft loan of Rs. 8.4 crores on 1% interest from ICICI, Mumbai to establish GLP facility. The international certification for **Good Laboratory Practice (GLP)** for chemistry (product chemistry including physico-chemical properties and characterization including impurities identification and quantification), toxicology (acute, sub chronic, chronic, and reproductive toxicology), and ecotoxicology (aquatic as well as terrestrial) by the GLP monitoring authority of the Ministry of Health, Welfare & Sports of the Netherlands, was obtained in a record time of 18 months, **an unique achievement**. This has helped the Indian agrochemical companies and multinationals

from abroad to utilize the facilities to generate safety data for international registration of their molecules and thus paved way for export of indigenously manufactured products to other countries and earned foreign exchange. Further Indian companies were thus able to compete with multinationals, in addition to providing scientific career and job opportunities to many.

KS: You are the legendary in Entomological research, can you please narrate the most satisfying moments in your long career

BVD: The most satisfying accomplishments in my long career have been: Discovery of whitefly species of subfamily Aleurodicinae in India, description of around 250 new species, a few genera and a book on **Handbook of Whiteflies** (Aleyrodidae: Hemiptera : Insecta) which is in press now; Development of Fredrick Institute of Plant Protection and Toxicology, Padappai and Jai Research Foundation, Valvada, Gujarat to international stature; Establishing, creating infrastructure, training and getting certified for compliance to GLP of Rotam Research Laboratory, Kunshan, China (first laboratory to be GLP accredited in China); ICAR provided me an opportunity to be a member of QRT team for evaluating Tuber crops research institutes during 1995 and RAC of ICAR-NBAIR, Bengaluru during 2010-2013 and ICAR-NRRI, Cuttack during 2014-2017. And serving as President for Applied Zoologists Research Association (AZRA), Bhubaneshwar since 1994.

Participation and presentation of papers in international meetings given below are very interesting:

1. I met Wang in May 2012 in China who

has been working on whitefly taxonomy and at the request of Prof. Dr. DU Yu-Zhou, Institute of Applied Entomology & College of Horticulture and Plant Protection, Yangzhou University, Yangzhou. Visited the University on 26th July 2012 and delivered two lectures: The Whiteflies (Aleyrodidae: Hemiptera: Insecta): Biosystematics and Pest Species Diversity, and Plant Protection Products: Present Status and Future trend in India.

2. Delivered an invited lecture on “Crop Protection Products in India - The Present and Future Trends” in the IUPAC Sponsored “2nd International Conference on Agrochemicals Protecting Crops, natural environment – Role of Chemistry for sustainable agriculture” held at Delhi on 16th February 2012 and chaired a session on 18th February 2012 at IARI, New Delhi.
3. Presented a paper on “GLP National status and facilities in India for Pesticide Product Registration” at the 5th Chemical Congress of North America, Cancun, Mexico, 14th November, 1997.
4. Presented a paper on “Challenges of implementing GLPs in India” in the 12th International Congress of the International Society of Quality Assurance at Yokohama in Japan, 11th June 1996.
5. Presented a paper on “Future trends in Herbicides usage in India” in the International conference Organized by the Agricultural University, Peradeniya, in May, 1995.
6. Presented a paper on “Sedimentation of Pesticide Residues in the Ecosystem in India” by participation in the poster session of the International Conference of Pesticide Chemistry (IUPAC) held in Washington in July, 1994.

7. Presented a paper on “Pesticide Industry and R & D activities” in the Annual conference of American Chemical Society, New York, 1991.
8. Presented a paper on “*Vitex negundo*, a promising botanical pesticide” organized by East-West Centre, Hawaii at the Agricultural University, Peradeniya in Sri Lanka in 1986.

KS: What is that you look for in young researchers and your advice to them please

BVD: Passion for the area chosen, in depth analysis for improvement, commitment, devotion and hard work. Develop scientific, administrative and leadership qualities.

KS: There are lot of awards and recognitions instituted by you for the cause of science and encouragement to the researchers, can you narrate them please.

BVD: A few of my colleagues insisting me to start a contract research laboratory and I was not interested. Then being Chairman of Prof T. N. Anathakrishnan Foundation I thought of establishing Dr B. Vasantharaj David Foundation which was registered as a Trust and inaugurated on 17th November 2019. The foundation has instituted various awards so far to promote science. Last year notably the foundation instituted three memorial awards viz., T. B. Fletcher Memorial award (Applied entomology), Rao Bahadur Y. Ramaachandra Rao (Ethology, Ecology, Physiology) and Rao Sahib Dr T. V. Ramakrishna Ayyar (Insect and mite Taxonomy) awards.

KS: Can we get an insight into your other activities beyond research and the most favourite activity/stress bursters

BVD: My continued support to AZRA in its activities and conducting annual conferences of Dr B. Vasantharaj David Foundation as long as I am able to do. Presently, engaged in a book project on Agricultural Biotechnology.

KS: Your views on the initiative taken by ‘Indian Entomologist’ magazine and suggestions for improvement

BVD: Running a journal is very difficult. I had bitter experience with Hexapoda. Since publication of Indian Entomologist is part of the activities of Entomological Society of India, its continuance is assured forever. Strive for improving the quality of papers published in the magazine. Ensure timely publication. Avoid notes on pesticides and biopesticides evaluation reports and non-validated IPM recommendations/suggestions. The editorial board team must be committed to keep up the standard of the journal.

The interview is conducted by Dr. Kolla Sreedevi. She is working as Pr. Scientist at Division of Germplasm Collection and Characterisation, ICAR- NBAIR, Bengaluru. She is working in the field of Insect Biodiversity and Systematics especially Coleoptera; Insect Ecology, biogeography and molecular characterisation. She is also an Associate Editor of IE.

Email: kolla.sreedevi@gmail.com
