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Indian Association for the Advancement of Veterinary Parasitology's News Bulletin

The Para Sight

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Indian Association for the Advancement of Veterinary Parasitology

IAAVP

:Inside this issue:

Partoon ! -Dr.Gopal Bharkad

XXVI NCVP and International Symposium at Shimoga (Karnataka) : A Grand Success

Shri A. Manju, Hon'ble Minister of Animal Husbandry, Karnataka state inaugurating 26th NCVP by lightening the lamp in the presence of Hon'ble Vice-Chancellor Prof. R.V. Prasad, Dean Dr. K.C. Veeranna, Prof. Placid E. D'Souza, President IAAVP, Dr. A. Sangaran, General Secretary IAAVP and Dr. K.J. Ananda, Organizing Secretary.

Shimoga (Karnataka) :
Dr. Ananda K.J.

This succinct report captures the highlights of three -day programme of various presentations, panel discussions and interactive dialogue at the IAAVP conference on leading the way in the development of Veterinary Parasitology, which took place from 15-17 February 2017 in Shivamogga, Karnataka.

The 26th National Congress of Veterinary Parasitology and International Symposium was very systematically organized by the Department of Veterinary Parasitology, Veterinary College, Shivamogga, Karnataka. The credit of successful organization goes to the organizing secretary Dr. K. J. Ananda, Associate Professor & Head, Dept. of Veterinary Parasitology, Veterinary College Shivamogga, and the committee members. The central theme on the dynamic concept **"Current concept in diagnosis and control of parasitic diseases to combat climatic change"** was chosen as the parasitic diseases has led an impact on livestock produc-

Dr. Placid E. D Souza Took Over as Dean of Veterinary College Hebbal, Bengalore

B e n g a l o r e : (Dr.C.Puttalakshmamma)

Dr. Placid. E, D Souza took over the new responsibility as Dean of Bengalore Veterinary college, recently on 28th September, 2017. He had his graduation and post

Dr. Placid. E, D Souza

graduation from Veterinary College, Hebbal, UAS, Bangalore and Ph.D., from CVSc., Tirupati, ANGARU, Hyderabad. He has 27 years of Teaching, Research and Extension work. Guided 13 MVSc students and 4 Ph.D., students and he is a member

From the Editor's Desk

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Its again a great pleasure for me to publish 6th issue of the News letter *The Para Sight*'.

Every new issue is a an addition in the experience and one more step towards improvement. This is again a very honest attempt to reach close to your expectations.

The positive feedback is very essential to have active participation of respected members of IAAVP. We are expecting more contribution and suggestions from you. This will definitely be a source of inspiration for the editor, people working directly or indirectly for the issue and the society.

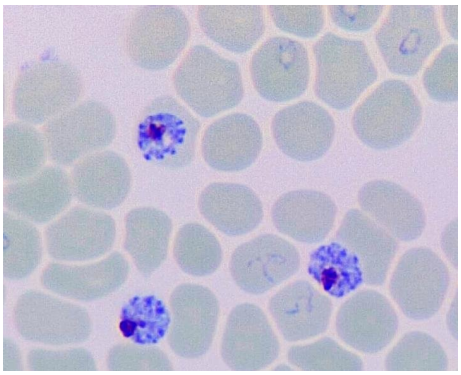
The last three issues (3th-5th) of '*The Para Sight*', which was circulated in the soft form earlier due to lack of funds and still could not bring it to hard form.

Here onwards the members will get the soft copy of '*The Para Sight*', from the website of the society. The earlier issues are also being published on the website.

I thank all of them who have contributed in this issue. I express my sincere thanks to Dr. Placid E D'Souza, President, Dr. A. Sangaran, General Secretary and for extending hands of help wherever found necessary.

I also thank you for your valuable suggestions and guidance which are more important to us to bring further improvements in coming issues of *'The Para Sight'*.

MMV malaria box phenotyped against Plasmodium and Toxoplasma



A Singapore-India collaborative research project between the Singapore University of Technology & Design (SUTD) and CSIR-National Chemical Laboratories (NCL) completed phenotypic screening of a large collection of potent chemical inhibitors (known as MMV Malaria Box), against pathogenic parasites *Toxoplasma gondii* and *Plasmodium falciparum*, causative agents of human toxoplasmosis and malaria. This knowledge opens up new avenues to study unique stages of infectious cycle that are affected by inhibitor classes towards anti-parasitic drug development

Plasmodium parasites cause malaria and morbidly impact the economies of the developing world. Although, asymptomatic and not as deadly as malaria, toxoplasmosis can lead to serious health concerns in pregnant women (and in immunocompromised individuals). Towards reducing the global burden of malaria and other neglected diseases, millions of compounds were screened, prioritized and assembled by the WHO-supported Medicines for Malaria Venture (MMV) as the MMV 'Malaria Box' collection of 400 chemically diverse small molecules. However, how these inhibitors kill the parasites remain largely unknown. Through complementary and comparative screening, the SUTD-NCL team has now discovered and segregated the MMV box library based on the life-stage events affected by individual inhibitors.

The team used complementary phenotypic screens on P. falciparum and T. gondii to identify phenotype-specific hits based on:

a) Inhibition of overall parasite growth,

b) Apicoplast segregation, and

c) Egress or host invasion and cross-validated between the two related, yet distinct parasitic forms.

They identified 24 molecules with nanomolar potency against both parasites, 30 molecules causing delayed death (in toxoplasma), out of which three interfere with apicoplast segregation, an essential process for the formation of new daughter cells. They also identified 26 molecules that specifically inhibit parasite release or host cell invasion of P. falciparum. Five of their 'hits' were also active against the release of T. gondii tachyzoites from mammalian cells, highlighting pathways that can be exploited in both parasites using the same class of molecules.

Principal investigator Assistant Professor Rajesh Chandramohanadas from SUTD said: "MMV malaria Box represents an excellent starting point for anti-parasitic drug development due to chemical diver-

CAFT, Bangalore Completes XXI ICAR Sponsored National Training Programme

Trainees with Vice-Chancellor, Dr. R.V. Prasad, former Vice-Chancellor, Dr. C. Renuka Prasad, Dean, Dr. Placid E. D'Souza and CAFT Faculty

Bangalore :

(Dr. Placid E. D'Souza)

The Centre of Advanced Faculty Training in Veterinary Parasitology funded by the ICAR, New Delhi in Veterinary College, KVAFSU Regional Campus, Hebbal, Bengaluru conducted the XXI National Training programme for 21 days on **"An update on vectors and vector borne diseases"** from 14th November to 04th December 2017.

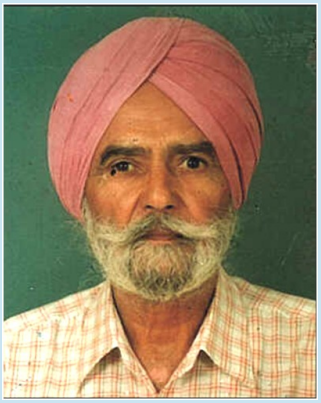
The participants comprised of 24 teachers from eleven states viz. Assam, Haryana, Jharkhand, Karnataka, Kerala, Madya Pradesh, Maharashtra, Rajasthan, Telangana, Tamil Nadu and Uttar Pradesh.

The ICAR Centre of Advanced Faculty Training in Veterinary Parasitology commenced in the VIII Five year plan in 1995 and was continued to the XII plan in 2016. It is now under the HRD activity of the NARS for 2017-18. The primary aim of the centre is capacity building by way of training faculty and also advanced research and development of instructional material. Thirty four training programmes has been conducted by this centre as a part of human resource development which included training of **704** teachers /scientists from different parts of India.

1. Trainees receiving Hands on training : Advanced molecular and Immunodiagnostic tools, *viz.*, DNA extraction from faecal material, blood and tissues.

Heroes of Indian Parasitology

Dr. B. S. Gill (1925 –2010)



Dr. B. S. Gill

(1925 –2010)

Dr. L.D. Singla
Prof. P.S. Banerjee
Dr. M.C.Agarwal

Dr. Bakhsish Singh Gill, of Ludhiana was born on 1st September, 1925. He joined Punjab University for his B.V. Sc. and M.V.Sc. degree programmes, where he established records by passing the degrees with distinctions. He completed his Ph.D. in 1959 (or 1969) from Agra University. Dr. Gill believed in the value of education and he did his post doctoral research at Wellcome Laboratories of Tropical medicine, London (1963-64) and Wellcome Research Laboratories, Beckenham, England from 1978-79. Dr. Gill worked as Protozoologist at IVRI (1955-1971) before he began his second career as Epidemiologist-cum-joint Director Research at PAU, Ludhiana (1971-74). Having served with the PAU, he remained Dean, College of Veterinary Science (1974-83) and Director of Research (Veterinary & Animal Science from 1983-85). After retirement from PAU, he joined as Scientific Advisor to Merc Sharp &Dohme-Agrivet in India (1986-91) followed by Consultant, Dynamic Pharmacals Ltd. Bombay (1991-94). He was the recipient of several medals and awards including Indian Council of Agricultural Research Fellowship (1952-54), Nuffield Foundation London Fellowship (1963-64) and Royal Society London Bursary (1978-79). He was elected Fellow of National Academy of Agricultural Sciences, Indian National Science Academy and National academy of Sciences. He remained Expert consultant FAO/UN on tick borne diseases. He represented India as an expert or invited speaker in International conferences and scientific meetings at London, Edinburg, Nairobi, Rome and Baghdad. Dr. Gill has conducted research on various aspects of applied Parasitology. The diseases extensively studied were tick borne infections, trypanosomosis, coccidiosis and helminthosis. (He recorded the occurrence two important diseases in India,*viz*. malignant catarrhal fever of bovines and enzootic calcinosis of sheep linked with soil mineral imbalance). He published 123 original research papers in international periodicals, two research monographs and added a new chapter on enzootic calcinosis to the Merck Veterinary Manual, 1978. His researches have been extensively quoted in international literature and have been highly commended at national and international levels.He served as member of several committees of ICAR and Government of India, concerned with animal health and veterinary education. His words of encouragement and affirmation will be treasured by those he touched and knew. The story answers many questions, but raises many more. The book (whether there is any book related to Dr Gill ? if any one is aware, please provide all the details) promises to move your heart as it reveals the dynamic career of this brilliant scientist. He will be remembered for his work, dedication, his poise, his compassion and his generosity. Entire parasitology fraternity remembers and pays tributes to him.

This is the event of late eighties when Dr. Gill retired from PAU and joined some Pharmaceutical firm as consultant. He was working on hump-sore,caused by *Stephanofilaria assamensis*, and has published a research paper on chemotherapy on the hump-sore in some foreign journal. Anyhow, he came to know that I have worked for my Master's degree on different aspects of ear-sore, caused by *Stephanofilaria zaheeri* under Dr. S.C.Dutt. He contacted Dr. H.L. Shah, who was at that time Professor and Head of Parasitology and asked about the information. I informed him that at Jabalpur, we are having large animal slaughter house where it is easy to collect affected buffalo's ears and their processing result in recovery of adult male, female, *S. zaheeri* along with developing larval stages.Dr. Gill made his tour program for JabalpurI went to meet him for a courtesy call. I found this retired scientist possessing the quality of mixing with much junior, young parasitologist very casually . The slaughtering was occurring in the evening hence I requested him to come in the department in the evening to show the detailed procedure. Next day, in the morning, we were able to collect a good number of nematodes with larval stages; the stereoscopic microscope helped in collecting larvae and we demonstrated how we can collect microfilariae from skin scrapings. It is important to remember

Recent trends in research on Trypanosomosis

Trypanosomosis or surra, caused by unicellular hemoflagellate *Trypanosoma evansi,* is one of the most important vector borne diseases of a wide range of domestic and wild animals of tropical and subtropical countries. The control measures presently rely solely on chemotherapy. An increasing evidence of emergence of drug resistant trypanosome strains warrants development of alternative control methods including a protective vaccine. Attempts to develop a protective vaccine targeting the immunodominant surface antigens have failed due to a systematic antigenic variation by the parasite. Among many non-variable vaccine targets for *T. evansi*, the constituent proteins of the flagellum, the paraflagellar rod (PFR), are considered important owing to their strategic location. PFR is one of the constituent proteins of the flagella and has role in beating the flagella and active movement of the parasite and therefore checking this action through effective blocking of the protein may result in cell death.

Currently, we are working in this area targeting this hidden/ covert/ novel antigen as immune prophylactic candidate. We have cloned and expressed the major constituent proteins of PFR *viz*., PFR1 and PFR2 using

pET32a vector in BL21 DE3 cells. The proteins were characterized by western blot and Dot-blot analysis. The immunoprophylactic potential of the recombinant full length PFR1 as well PFR2 proteins was assessed in mouse model. The research findings have reasserted the potential of such covert antigens as a viable immunoprophylactic targets by eliciting protective cell mediated and humoral response and lowering the parasitaemia as well as prolonging the life span in the mice lethally challenged with *T. evansi*.

An interesting area of research to develop irradiated vaccines was not seriously pursued for the past twenty years due to two main reasons; firstly it was considered that the development of technologies was impractical or impossible and secondly that modern subunit vaccines would provide a solution as they could be more easily developed. The recent successful development of an irradiated vaccine for human malaria has demonstrated a new the feasibility and practicalities of this technique and indicated that technical problems can be overcome using existing knowledge without recourse to sophisticated technology. There is now good reason to re-evaluate the use of irradiation attenuation for vaccine production. Recently we have standardized the dose of gamma radiation for attenuation of *T. evansi*. The radiation attenuated *T. evansi* were used in immunization trial involving mice. The immunized mice could withstand a lethal homologous challenge and the conferred absolute protection was attributed to both the humoral and cellular immune responses.

Additionally we are working in the area of development of diagnostics for detection of haemoprotozoan pararasites. Recently, we have developed and evaluated of duplex PCR assay for simultaneous detection of *Babesia bigemina* (*B. bigemina*) and *Theileria annulata* (*T. annulata*) in cattle. The developed assay represents an economical, simple, sensitive, specific and reproducible diagnostic tool for simultaneous detection of tropical theileriosis and bovine babesiosis and boosting targeted selective control strategy in endemic areas.

We have also developed a novel, rapid and cost effective direct blood PCR-RFLP assay, targeting *msp5 gene* as a specific diagnostic tool for detection and differentiation of two *Anaplasma* species (*A. ovis and A. marginale*) in goats.

- Dr. Biswa Ranjan Maharana
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Dr. B. S. Gill

continued …..from page 4

Professor Gill as an icon of Indian Parasitology. First because of his contributions in protozoology. Though surra or *Trypanosoma evansi* was discovered in 1880 from India by a British Scientist (Griffith George Evans), the first monograph ontrypanosomosis was written by Dr H.N. Ray, perhaps in 1954. Dr. Gill extensively worked on surra while he was at IVRI and provided important new findings. He published monograph on trypanosomiasis two times,first in 1977 and second in 1991. When he was at PAU, he started working on tropical theileriosis ,caused by *Theileria annulata* and he was the pioneer to develop culture vaccines in India against theileriosis .As referred above his expertise was recognized internationally and he was invited at different forum to air his views.

Another important quality of Dr. Gill was that, he was a good administrator; here I do not mean good for being able to carry over his work. He was a good administrator as he did good for veterinary profession as well as for parasitology. The one example comes when he persuaded Dr. S.C.Dutt to leave ADG post of ICAR and join PAU as Professor and Head of the newly created Department of Parasitology. Dr. Gill did all the best to retain Dr.Dutt at PAU, provided bungalow in the campus and helped to establish a laboratory where he could work ,even after his retirement . Dr.Dutt completed his monograph on Paramphistomes but that could not be published in his life time and this monograph could see the light with the help of Dr. Gill.

Dr Gill also enriched PAU with different schemes in Parasitology which were responsible for applied research work needed for the state.The Parasitology science desires such scientists who not only conduct good research work but becomes instrumental to create a second line of researchers in order to continue the research work. Dr. Bakhsish Singh Gill breathed last on 4th

26th NCVP.....

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tion, reproduction and hence the economy. The congress was attended by 192 delegates across the country and abroad. The conference was inaugurated by Shri A. Manju, Hon'ble Minister of Animal Husbandry, Karnataka state with the presence of Hon'ble Vice-Chancellor Prof. R.V. Prasad, Dean- Dr. K.C. Veeranna, IAAVP President Placid E.D'Souza, General Secretary Dr. A. Sangaran and the Organizing Secretary Dr. Ananda, K. J.

During the inaugural function the Compendium – Souvenir cum Abstracts and the text book entitled **'An update on Diagnosis and Control of Parasitic Diseases'** comprising 30 chapters from eminent parasitologists/scientists across the country and abroad was released by Shri A. Manju, Hon'ble Minister of Animal Husbandry, Karnataka state and Hon'ble Vice-Chancellor Prof. R.V. Prasad.

During the 26th NCVP and International Symposium the IAAVP National fellow awards were received by Prof. L.D. Singla, Prof. Rajesh Katoch and Dr. Srikanth Ghosh. The various oration awards like S.M. Ismail oration award was received by Dr. Soundarajan, Nishamani Parija oration award – Dr. Ananda, K.J., D.P. Banerjee memorial award – Dr. A.K. Tewari, Dr. N.S. Ruprah memorial award to Dr. B.W. Narladkar and Dr. Kalyana Sundaram memorial award to Dr. G. Ponnudurai. The awards were given to the deserving and eminent parasitologists/Scientists for their excellence in the respective fields.

The conference had four scientific sessions, young scientists and oration awards. Each session comprised of two to three lead papers with oral and poster presentations separately. In addition an innovative quiz competition was held for the first time for post graduate students of Veterinary Parasitology to build interest towards the subject. Each session along with the quiz competition was allotted 3 prizes for the best contestants. The young scientist award in the memory of Dr. J. P Dubey was awarded to a single participant whose research work was found to be the best.

In order to create interest towards to research aspect the IAAVP decided to provide an opportunity in the upcoming conference for the Post graduate students by announcing the Young Scientist award separately for M.V.Sc & PhD students. IAAVP also decided to give Best MVSc thesis & Best Ph.D thesis award from the upcoming conferences. During the conference all the retired Parasitologists from Karnataka state were felicitated for their dedicated and immense contribution in the field of Veterinary Parasitology.

Overall, the event was a grand success and the delegates carried back lovely memories of the conference in addition to scientific enrichment.

Dr. Sangaran, Dr Soundarajan Receive Awards

Dr. Soundarajan Chinnaiyam receiving "Best writer award from Honourable Education minister of Tamilnadu on 9th February 2018

Dr. Sangaran Armugam receiving "Icon of Rotaract" award during Annual conference of district Rotract council on 9th February 2018.

MMV malaria box. continued from page ...2.

sity, potency and open access. However, more information is needed on cellular pathways and targets affected by these inhibitors before pharmacological optimizations can be pursued. Having completed the phenotypic characterization and stage-specificity studies, we have now shortlisted a handful of excellent inhibitors for detailed mode-of-action and medicinal chemistry studies towards novel drug development."

"Egress and invasion are significantly similar between malaria and toxoplasma parasites. Therefore, identification of molecules that affect both parasites during their release from infected host cells not only highlights robustness of the complementary screening approach we adopted, but also conserved drug targets for pan anti-parasitic drug development," Dr Dhanasekaran Shanmugam from NCL added.

Glimpses of 26th NCVP, Shimoga, Karnataka

❶Receiving Oration Awards of IAAVP : Dr. BW Narladkar, Dr. Saundarajan, Dr.Ananda KJ, Dr Tewari AK, Dr. G. Ponnudurai.
❷ National Fellow Awards of IAAVP : Dr. Rajesh Katoch, Dr LD Singla, Dr Shrikant Ghosh, Delegates attending Plennary session of 24th NCVP

The 27th Congress of the WAAVP to be held at Madison, USA

The 27th International Conference of the World Association for the Advancement of Veterinary Parasitology will be held at the Frank Lloyd Wright designed Monona Terrace, Madison 7th - 11th July 2019.

Appeal from the organizers : As the Chair of the Local Organizing Committee, it my pleasure to invite you to Madison July 7-11, 2019 for the 27th meeting of the World Association for the Advancement of Veterinary Parasitology conference (WAAVP). The theme of the Conference is "Sifting and Winnowing the Evidence in Veterinary Parasitology", which speaks to the truth that we cannot for a moment believe that knowledge has reached its final goal. The Local Organizing Committee and the Scientific Committee are busy organizing the venue, plenary lectures by leading authorities in our discipline as well as keynote addresses on topics of interest to all parasitologists. We will be soliciting abstracts for oral and poster presentations across the myriad of topics of interest to veterinary parasitologists.

The conference will be held at the Frank Lloyd Wright designed Monona Terrace, a stunning multi-level structure in the heart of Downtown Madison on the shore of Lake Monona. The Monona Terrace has the distinction of being one of the first US convention centers to be LEED Gold Certified. All conference hotels are within very short walking distance of the Monona Terrace. Adjacent access to pedestrian friendly walkways and biking/hiking trails along Lake Monona wind throughout Madison. Come early, stay after the meeting to enjoy the state that invented summertime fun!

With warm wishes.

Tom P. Kennedy
University of Wisconsin-Madison
WAAVP 2019 LOC Chairperson

A group photograph of the participants of XXVI NCVP which was organized at

Sad Demise of Dr. R. C. Chhabra

Ludhiana : (Dr. L.D. Singla)

Dr. R.C. Chhabra former Head Parasitology PAU Ludhiana. it is informed the sad demise of Dr Chhabra on 30th January 2018 at 8.00am at his home at De-

hradun. Besides being great human being, he was an excellent human being. Dr. Chhabra also served as parasitologist at University of Zimbabwe , Harare, Zimbabwe and Zambia before settling down at Dehradun.

President of IAAVP Dr Placid E DSouza, General Secretary Dr. A. Sangaran, Treasurer Dr C. Rayulu and office bearers expressed deep sorrow in their message on behalf of all members of IAAVP family and prey to the Almighty to grant peace to the departed soul and give solace to the family in this difficult time

IAAVP

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