presented in this book. Such informations are being published annually in the form of a book since almost a decade to document the major activities and salient findings of IRRI in a concise form.

The subject matter, presented in the book, could be divided into four major parts. The brief first chapter, termed—'one step ahead' focusses the most important advance results like the development of varieties resistant to insects and diseases, which would be virulant in the near future; technology like the use of *Azolla* as a bio-fertilizer in phosphorus rich soils to reduce the need of chemical nitrogenous fertilizers etc. The second part, which covers the bulk of the book deals with the major research results of 1982 in 25 different branches, covering GEU Program, pest, disease, soil and water management and international net work on rice testing program (IRTP) etc. However, some information on post-harvest technology, which is an important aspect in realising higher return through the scientific harvest and post harvest operations, in addition, whould have been useful.

The 3rd part of the book, deals with general aspects like climate, constraints on rice yields, analysis of various socio-economic systems, training and information service etc at IRRI. The last part deals with IRRI's financial donors, personnel etc.

All the chapters of the book are comprehensive and informative. The results and colour illustrations presented in these chapters clearly indicate the proper planning and in-depth study in various aspects for realising increased production. The book, like its earlier editions, maintains its high standard and would serve as a good source of reference for latest research results for the research and extension workers engaged in rice production program.

Central Rice Research Institute, Cuttack 753 006.

H. K. PANDE

NEWS

THIS WEEK'S CITATION CLASSIC

Singh K R P. Cell cultures derived from larvae of *Aedes albopictus* (Skuse) and *Aedes aegypti* (L.). *Curr. Sci. India* **36**:506–8, 1967. [Virus Research Centre, Poona, India]

This paper describes the establishment of cell lines from the newly hatched minced larvae of *Aedes albopictus* and *Aedes aegypti* mosquitoes. Methods employed for subculturing up to the fifteenth passage level, as well as preliminary characterization of the cell lines, are given. [The *SCI* ® indicates that this paper has been cited in over 230 publications since 1967, making it the most-cited paper ever published in this journal.]

* * *

Vijai Dhanda
Division of Medical Zoology and Entomology
National Institute of Virology
Indian Council of Medical Research
Pune – 411 001, India

November 29, 1983

"It is unfortunate that my predecessor K. R. P. Singh, the author of the cited paper, died within a decade of its publication. At the request of the director of the National Institute of Virology, Khorshed Pavri, I am writing this commentary.

"In the early 1960s, soon after joining this institute, Singh began studies on the vector virus relationship of some of the arboviruses which were important to public health. He realized the importance of arthropod tissue culture in studies on arboviruses and received full encouragement from T. Ramachandra Rao, then director of the institute, and Charles R. Anderson, the chief scientific representative of the Rockefeller Foundation. Singh was awarded a Rockefeller Foundation fellowship to visit the leading cell culture laboratories all over the world to gain experience in this discipline. On his return, he devoted himself wholeheartedly to the problem and succeeded quickly in establishing cell lines from *Aedes albopictus* and *Aedes aegypti*. The paper was sent to *Nature* for publication, but was returned. It was then sent to *Current Science* where it was promptly accepted.

"Singh's success was mainly due to the choice of his material, which consisted of *Aedes* eggs capable of withstanding dry conditions and the rigors of surface sterilization. They can be accumulated in large quantities to provide a sufficient amount of tissue. Above all, Singh seemed to have possessed a 'green thumb.'

"Singh's cell lines were the first continuous mosquito cell lines developed anywhere in the world. These were flown to Yale Arbovirus Research Unit in New Haven, Connecticut, where Sonja Buckley maintained a subline. Their distribution to scientists all over the world was undertaken from this institute and from Yale.

"Singh's *Aedes albopictus* cell line (ATC 15) found immense favor among arbovirologists because it was susceptible to several mosquito-borne arboviruses. Distinctive cytopathic effect with some flaviviruses facilitated their easy detection.[1,2] It is a rapidly growing cell line, requiring simple media and easy maintenance. Thus, Singh provided a tool which arbovirologists and cell biologists had been trying to obtain for a long time.

"Successful cloning of ATC 15 cells by Igarashi[3] gave a further boost to Singh's work. This clone is highly susceptible to both dengue and chikungunya viruses and is now popular all over the world.

"For his work, in 1968 Singh was awarded the Shakuntala Amir Chand Prize of the Indian Council of Medical Research."

---

1. Singh, K. R. P., Growth of arboviruses in *Aedes albopictus* and *A. aegypti* cell lines. *Curr. Topics Microbiol. Immunol.*, **55**, 127–33, 1971.
2. Buckley, S. M., Hayes, C. G., Maloney, J. M., Lipman, M., Aitken, T. H. G. and Casals, J., Arbovirus studies in invertebrate cell lines. (Kustak, E and Maramorosch, K, eds.) *Invertebrate tissue culture.*, New York: Academic Press, 1976, pp. 3–19.
3. Igarashi, A., Isolation of a Singh's *Aedes albopictus* cell clone sensitive to dengue and chikungunya viruses. *J. Gen. Virol.*, **40**, 531–44, 1978.

SUPER COMPUTER FINDS LARGEST PRIME NUMBER—$2^{132,049}-1$

Computer scientists using one of the world's fastest computers believe they have found the largest prime number yet – one that contains nearly 40,000 digits – knowing a prime number larger than all others does not offer much benefit to society or to anyone but a handful of mathematicians, but it is a feather in the cap of the supercomputer that finds it – in this case, a Cray XMP which sells for about $9 million. The new prime number, which has yet to be verified, is 2 raised to the 132,049th power minus 1, a number with 39,751 digits, if printed, the number would fill more than one entire news paper page . . . 'it's like racing computers', said David Stowinski of Cray Research Inc. in Chippewa Falls, Wis., makers of the Cray XMP and its predecessor, the Cray-1. Using these machines, Stowinski found the two previous largest primes as well as the latest one, which was found recently on an experimental machine in the company's office." (See Dembart in *Philadelphia inquirer, 25 September '83, p. 8 A, Los Angels Times Service*)

Edited and Published by Prof. M. R. A. Rao, Current Science Association, Bangalore 560 08
Phototypeset by Macmillan India Ltd., Bangalore 560 025 and
Printed at Macmillan India Press, Madras 600 041.