

THE IMPACT OF CURRENT RESEARCH ON THE DEVELOPMENT OF THE NR INDUSTRY

BY

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We have come to the end of another Rubber Conference. It is now my duty to summarise the high lights of the papers presented in the two days and draw the conclusions therefrom. I am going to change the format of this presentation. I am going to ask: of what use are Conferences of this nature? What have we learnt in the two days? Where is the rubber industry moving? What is the future for rubber? What has been the research contribution towards the present status quo? What have we done and are doing? Are we going the right way? I will try to answer these questions, as the answers struck me in these last two days.

Some people must question the need for Conferences of this nature—in my humble opinion it is necessary to take stock of your work every so often, and these occasions give you the opportunity to take a detailed view of your work. You get a chance to compare notes with colleagues and also to know the latest developments in the field of research in other countries. There is the other side of the coin too, some of you may think that these Conferences are held regularly for the publicity—true, gentlemen, though only partly, I believe in what I said before, and I also believe in publicity. I had some experience in the commercial world some years ago and know the value of publicity. I am sure that everybody will agree that the RRI of Sri Lanka is now better known in this country than it has ever been before. More people visit the Institute, more people are interested in our work and all this helps us to do more. I take just pride in the fact that a small Research Institute stuck away in the wilds of nowhere can organise a Conference and Exhibition of this nature. Finally, I am sure that the people who pay for our work has the right to know what we are about, at regular intervals; because Annual Reviews and Journals tend to become boring at the best of times. So this is it.

Now what have we learnt in the two days? In plant breeding—the aim of the breeder is to produce high yielding disease resistant clones that will grow in the varied soils and climatic regions in this country. You have seen that we have some outstanding clones coming up in the RRIC 100 series. I received a letter only the day before yesterday asking us whether we would approve of the planting of 500 acres of RRIC 100 and 101 at this stage. I met this Company Director last night and was really happy to hear him say—“this clone RRIC 101 is fantastic, if the latex drip was just a bit faster, it would have been a continuous flow, I was so fascinated that I stood by the tree for 15 min just looking at it”—this from a shrewed Company Director! So you see, we are well on our way to the ideal rubber tree—we can just about fix a tap to the tree, turn it on when necessary and have a system of pipe lines to bring the latex to the factory. We are really getting results in breeding—we have now got new clones that can be tapped at 5 and even 4 years after planting, thus making a break in one of the greatest drawbacks—the immature period—we have clones that grow successfully in the dry districts like Moneragala, and now as Mr. Pushparajah suggested we are testing out our clones to select for soil suitability. It has also been possible to breed for *Dothidella* resistance. We are tackling this problem from various angles—controlled breeding and tissue

culture—both Sri Lanka and Malaysia have had initial successes with tissue culture of *Hevea*. The paper presented by Mr. Napitupulu showed that Indonesia, which has already bred some outstanding clones, is developing her breeding programme on certain characteristic lines.

The aim of the botanist is to increase the yields of the available clones or the trees on the ground, whether it be by using novel tapping systems or yield stimulants and rain guards. You heard yesterday that, after testing out various systems of tapping, we have concluded that the S/2,d/2, 100% system is still the best for our clones. However, the novel tapping systems being tested by our French friends should be worth investigating. Dr. Compagnon spoke about different rest periods, and if we can rest our trees during the critical bark rot period, that our Dr. Satchuthananthavale has now pin-pointed, without losing yield and in fact increasing yields, this may be the ultimate answer for Bark Rot—in fact, India appears to be getting quite good yields in spite of heavy *Phytophthora* leaf-fall as described by Dr. Nair, with the enforced rest period in the South West monsoon season. This is a line of reasearch I will commend to the Botany Department.

As far as the Planters are concerned, on the basis of the results of experiments presented by Mr. Chandrasekera and Dr. Satchuthananthavale, I should like them to exploit their trees more vigorously by the use of Ethrel and rain guards. Dr. Sekhar has assured you that Ethrel has not caused damage to trees in Malaysia, where high yields, with over 100% increase in yields, are obtained over 500,000 ac—an acreage remarkably close to our total area under rubber and 10% of the Malaysian area. The secret of Ethrel appears to be that it will give good results on trees that have been managed well throughout. Naturally, if you have some poor played-out rubber and you apply a little Ethrel on it and put a few ounces of fertilizer you would not expect much, but let us also go for that 10% of good mature rubber and get the best. Mr. Chandrasekera clearly pointed out that one of the bugbears of Ethrel is its price in Sri Lanka and in discussions with Dr. Sekhar, I find that the price of Ethrel is prohibitive in this country. Clearly it is now our duty to do something about this situation, and it will be done. Along with high yields, the spectre of Brown Bast raises its ugly head and studies are being conducted all over the world to pin point the causes of this disorder and we are making our own contribution. I should think that further fundamental studies on bark tissue, progressively from the inception of the disease, should complement the studies described on growth substances, as you are never sure whether the inhibitors are the cause or an effect of the disease.

You saw from the paper presented by Mr. Camillus Silva that at last we are looking at the problem of *Hevea* fertilization as a part of management practice. We will pursue these studies vigorously. The RRIM contribution to the Soils Chemistry Section, so wonderfully presented by Mr. Pushparajah, showed us how far we are behind in this area. There is the importance of a Conference of this nature—the RRIM is in a position to recommend clones for particular soils, wind blown areas *etc.* Now, don't get me wrong—our Soils Department has been hampered by the lack of staff over the years, but we are on the right track and I assure you that we will produce the goods as soon as possible.

In Plant Pathology the perenial problem of *Fomes* was discussed and the discussion showed that the old horse has not lost any of its vigour. However, I am sure we are on top of the problem. There were two very important papers on *Phytophthora* diseases,

one from India and the other from Sri Lanka. These clearly showed the importance of weather on all *Phytophthora* diseases. The weather in India is so congenial to the fungus that they have to spend a great deal of money on control measures—in this we are lucky and all this goes to show the importance of critical studies on weather in relation to the biology of the fungus. Then there was the thought provoking paper of Mr. Sripathi Rao on SALB. You will be interested to know Sripathi is the leader of the team of Pathologists from all NR producing countries, looking into all aspects of SALB and the measures we should take to prevent its entry into South East Asia—this shows that unlike in any other crop, a close co-operation exists between the Scientists working in different parts of the world on rubber.

There was then a series of papers from our Rubber Chemistry Department—most of these dealt with new uses for rubber and new methods of coagulation. The first paper was on the preparation and uses of cyclised rubber and chlorinated rubber. The related paper was presented by Dr. Selvaratnam of the Sri Lanka University. Graft polymers have their special uses and we are grateful to the Peradeniya Campus for their interest in this subject. We are always looking for people to do various projects for us and now—in addition to the University—for the first time in Sri Lanka, we have the case of the Director of the Tea Research Institute doing a special project on rubber. We are also encouraging final year Chemistry and Engineering students to do research projects at the RRI.

There were two papers on new process rubbers. The success of the Cenat Factory should be an eye opener to our pundits—the economists—who have run this country so effectively for so long. Small block rubber factories, with plans for expansion, should have a place in this country. The final paper was presented by Mr. Cheong Sai Fah and described the latest developments in NR manufacture in Malaysia.

A number of our officers are under training in the U.K. now and I look forward to the time when we too can play a major role in the advances in Rubber Chemistry and Technology in this country. In view of the snide remark of at least one member of the audience this morning, I am glad to say that one of our officers at Aston has already made, what we think is a major breakthrough for NR. I assure you, in the next three years at least 50 percent of the new developments in NR technology will come from Sri Lanka—with due apologies to Dr. Sekhar and Dr. Mullins. Mr. S. W. Karunaratne said that our output on expenditure on research is as good as that of the RRIM—I saw Dr. Sekhar nod his head at that and I will leave it at that, merely saying that I am quite satisfied that our staff is pulling its weight, every man and woman of them, and I am proud of them, just as Dr. Sekhar and Dr. Mullins are proud of the achievements of their respective officers.

Now to Dr. Sekhar and Dr. Mullins who presented two complementary papers. Dr. Sekhar, I have always said and I say it again—thank God for Sekhar as far as NR is concerned. I should like to say it here advisedly—that in the last dark period of low prices for NR, we would very nearly have lost the battle with SR had it not been for Dr. Sekhar. You have heard Dr. Sekhar in Sri Lanka three times now and you know what a wonderful speaker he is. I want to pay a special compliment to you here Dr. Sekhar as I did in 1970—you are the most dynamic speaker I have listened to, and I have heard the best of them. How do you do it? Anyway, we in the NR producing countries are grateful to have you on our side. I am sure that we have won this round.

Now, I must thank you for all the trouble you took to come here—in the last four days Dr. Sekhar has been in San Francisco, Kuala Lumpur, London and Rumania—he was in the middle of a tour of Europe and USA with his Minister and because of our request he arranged for Dr. Leslie Bateman, the Controller, to take his place and rushed here. I am personally grateful to you for this—when you asked me what I wanted you to speak about, I said, "I leave it to you", but had I made a specific request I could not have done better, because you touched on all the important points as far as we are concerned. You explained that NR prices are going to be better in 1975 and still better in the 1980s. So you said "let us not lose by default". That is why I have been advising the Government recently that we should replant or get out of the business. Unless we replant now, we will not be in a position to harvest the rewards of the high prices to come. The most important concepts for NR that Dr. Sekhar spoke of is to take a dynamic view of the NR industry—think big—and this I will recommend to all our research officers—think big—you heard of all the things that Dr. Sekhar spoke of — 3 part trees, tissue culture, gene transference—9000 lb/ac clones—I am sure that he did not say that these things are possible in the next two years, but unless you think big, you will not achieve anything—especially in research. In fact, I firmly believe that anything is possible with effort. So let us all in NR go for the 40% share of total elastomers which Dr. Sekhar said was rightfully ours.

Dr. Mullins spoke on the technology of NR and explained the more recent developments—you can see that the future is really bright for NR and I assure you, Dr. Mullins, that we will be contributing our effort in the next 2 years. Here, as in the case of Dr. Sekhar, I would like to say a big thank you to you, Dr. Mullins, and relate the story briefly; so that we in Sri Lanka can truly appreciate your generosity. Mrs. Mullins returned home from 10 weeks in hospital after a cerebral haemorrhage only on Tuesday last, and he left home on Wednesday to come here. He is leaving us on Saturday to get back as soon as possible. Thank you, Dr. Mullins, we will always think of you sincerely as a true friend of Sri Lanka.

Dr. Matthan also read what I considered a key paper for my particular purpose, industrialisation. It is one thing to industrialise. It is another to get markets. One of the reasons for India's rapid advance in industrial development is her vast internal market. We should link up for marketing and technical advice with a country with a large population. Apparently India can provide technical assistance and machinery at lower costs than advanced countries. So the needs and objectives of each developing country will have to be viewed on an area basis. Why should the Asian Countries not try to help themselves? A regional development plan, coupled with a global marketing strategy, as suggested by Dr. Sekhar this morning, would be the ideal.

The economics of rubber production was discussed by Mr. A. B. Dissanayake and he showed that cost of production could be reduced, we should study this subject more critically.

So where is the rubber industry going? Dr. Sekhar told us today—the NR industry is going great. What is the future for NR? Ladies and gentlemen, I have no doubt at all that the future for NR is bright. When I was considering it last night I wanted to say that come the late 1970s, NR will really hit the high spots—but Dr. Sekhar said that this morning and he is more competent to talk on the subject than I, as he is a Rubber Chemist, and he travels more and meets more people. What has been the research contribution? Gentlemen—and ladies too—I am willing to stand up here

today and proudly say that, had it not been for research and development, NR would have been as dead as the dodo today—NR, we are happy to say, is the only natural product that has by research and development been able to fight off a synthetic rival. How many of you remember Indigo—which got knocked out by Synthetic dyes?

In all this the RRI of Sri Lanka has done its bit, as you have heard from the papers—and I am happy to say that we are going the right way—in fact, Dr. Sekhar said so today, he said that he has decided to do research on rubber technology in Malaysia itself. I wish to say to Dr. Sekhar that we decided on that in 1969 and I am sure that the next break will come from one of our countries from one of our own people—with apologies to the MRPRA and Dr. Mullins, who have done a wonderful job for NR in their day.

It must be apparent to everyone that this Conference was a co-operative effort, all the members of the staff did his or her best. I had only to tell someone to do this or that and it was done as a matter of course. How can I thank you—as I said to the Minister yesterday, thanking is a matter of the heart and you who know me better than anybody else, you know I am grateful to you. It is a pleasure to lead a team like you.

I feel a great debt to you, the Planters—I know most of you, by your first name, and you have always given me generous support for which I thank you. If there is anything in the Conference that you have to criticise please write to me because our next Conference will be in 1976—100 years of rubber in Sri Lanka—so we can iron out the ruffles.

I wish to thank the foreign delegates for their presence and their contributions, the Rubber Research Board for their support and encouragement and all of you here for your attendance and your patient listening.

Now let me wish you good night and a safe journey home.