

PROGRESS IN INDUSTRY

A MUSING

F. R. Tubbs*

"Over the years I have owed so much, from friends and colleagues in the tea industry as in the Tea Research Institute, that I can only warmly acknowledge my indebtedness and stress that without such co-operation 'progress' may well be mis-directed : privileged by the Editors' invitation to write on 'progress in industry' for this Centenary Number, my feeling that I must write of the things that really matter, rather than of those which so often govern our daily life, is perhaps my best tribute to all my colleagues and friends, of today and of yesterday alike."

F.R.T.

Progress in industry — a fine, heart-warming phrase — one beloved alike by the politician, the planner, the bureaucrat, the man of business, the scientist, the producer and the man-in-the-street — yet at the same time signifying the one and only material hope, of those other and greater classes — the mother, the children of today and of tomorrow, in this over-populated world.

But, even in general terms, what does this fine phrase mean when shorn of all its glitter, real or illusory ? To the man-in-the-street, less hours, more pay, more leisure inadequately employed ? To the producer, more to sell at greater profit ? To the scientist ; more opportunity to gain further grains of knowledge ? To the business man ; more profits to employ in yet further profit-seeking enterprise ? To the bureaucrat ; greater opportunity for ever more regulations ? To the planner ; vision without responsibility ? To the politician ; more revenue disposable to attract and appease the man-in-the-street at election time ?

How grey such a picture to the priest, the judge, the serviceman, the welfare worker, the dedicated civil servant, the statesman, the nurse, psychiatrist or doctor to all who serve man kind in one guise or another, however humbly. But the real view is lit by all the service of industry to man, in providing work, support, and the revenue to maintain and improve the community as an effective social organization in all its ever increasing complexity. It is in agriculture such service, essential service, can at once be seen at, perhaps, its simplest and best. An observer could well feel that in such service of industry to man, the tea industry of Ceylon has played a steadily more worthy part, increasingly fitting it the better to face not only its own problems but also its increasing responsibilities to the island of Ceylon and its people over the years to come.

For an industry, and with it all who work in it or benefit from it, to progress in the efficient use of the human and material resources available to it, there are inescapable requirements to be met. There must be willingness not alone to accept change under the pressure of competition or necessity, but active willingness to *invite*, with sober caution, the discomforts and uncertainties of change ; to *invite* alien or novel approaches to current problems from those who will challenge accepted procedures with that informed caution, acceptance of past experience, and sense of inescapable responsibility which all innovators, scientist or no, ought constantly to cultivate.

*Dr F. R. Tubbs was the first Plant Physiologist of the Tea Research Institute of Ceylon, and is now the Director of the East Malling Research Station, Kent, England, and the Chairman of the Scientific Advisory Committee to the Tea Research Institute of Ceylon in the United Kingdom,

Our industry has shown itself, in all its aspects and over many decades, to be willing to invite and to accept change, albeit with caution sometimes not easily distinguishable from reluctance !!

First the jungle into coffee and cinchona — thence into tea : at cost of infinite labour and devotion, but with ever-increasing benefit to Ceylon and those who served her — tea at Peradeniya, tea on Loolecondera, tea steadily spreading over Ceylon's green hills like a mantle ! Primitive means of manufacture steadily refined to win for Ceylon tea an acknowledged place amongst the world's producers. Low yields creeping slowly up under the impact of increasing knowledge of agricultural research during the first quarter of this century — 60 years of dearly bought but increasing success, won by human pains that few today would be willing to face and can but demand our respect and humility.

But an insidious price was paid for such success, born of the very virtues that won it. Quality, yield, a world name won, name and reputation that in a harsh commercial world could well be lost overnight ; yield, wages and salaries so low that few dared venture the simplest experiment or novel approach not previously approved or so certain of success as to be unnecessary. The growth of companies and shareholders wanting only profit and growth of their invested capital. The commitments of powerful interests and agents to procedures on occasions not too well understood but above all ' safe '. The tea industry, outgrowing the lives and knowledge of those scientists and advisers who had served it in its earliest days desiring only continuance of that security and modest prosperity dearly bought, yet with the years of world depression and the constant discouragement of restriction not far ahead.

The tea industry of the 1920's by then 60 years of age : the tea industry, developing the hardened arteries and less flexible outlook considered, by the young, characteristic of such an age ! Few might have credited it with the will to seek change, the forbearance to accept criticism and the genuine interest in the ideas of those who bred in agricultural research in Britain, were joining the nascent research station at St Coombs, already being created by the joint efforts of such experienced staff as Petch and Gadd attracted from the Department of Agriculture — a Department itself to which so much was owed in earlier days. Remember that ' up-country quality ' was such a mystique that reputations and jobs alike could be lost by a half cent fall in price ; remember that only ' dangerous innovators ' risked the application of 30 lb of N to up-country tea, amidst the dark mutterings of neighbours watching this rakes progress after yield.

To form a tea research institute, to give its staff individual and complete freedom to urge their *own* considered opinions on questions of controversy (and what planting procedure was *not* a subject of controversy ?) : the industry to be willing itself to pay for the Institute's foundation and steady enlargement at a time when tea was fetching an average of 1s 8d on the London Market and 95 cents in Colombo : to accept through all the dark days of depression and tea restriction in the thirties, good-naturedly the statesmanship and tact of Norris, the radical and meticulous approach of Evans, the insistence (so well justified) on years of critical field experimentation of Eden, the, at first, unrewarded efforts of King to control Tortrix, and even later, Tubbs arriving brash in his youth, enthusiasm — and ignorance ! To leaven with understanding the heated disputation or downright contradiction of the views of such scientists, to give them time, helpful criticism, friendship and not least, the generous fruits of long planting experience — all this showed youth with its willingness to progress and to progress at risk, not age nor hardened arteries ! And so, *together*, records were broken, in yield, in price, in quality, in profit, with benefit to all. Steadily the Tea Industry justified in a new and more demanding age its position as the prime support of the Island's economy in a changing world,

Manufacture, manuring, control of pests, control of disease, improved culture, clonal tea, replanting ; in every aspect the industry has changed and benefitted from the fact that those who founded and developed the industry would re-examine the most deeply held conviction, and by sheer co-operation, helpful criticism, and community acceptance could make the best use of the errors as of the success of its scientist colleagues — fortunately success were sufficiently numerous to maintain such confidence !!!

Another 25 years have passed since the thirties ended in the stresses of a second world war. With the war's end, a new era began ; widespread progress had already been made in meeting its needs. New questions and new versions of old problems now loom large : the study and management of the soil with its teeming life, the interaction with our tea culture of root growth, distribution, and competition, and absorptive activity ; all the range of problems, long-term as well as short-term of mineral availability and uptake under fertilizer regimes at last realizing the real cropping capacity of the tea bush ; the nature, amount, and utilization of the bush's energy reserves for growth ; replanting, soil improvement, the factors controlling the growth of the plucking shoot and its development ; fertilizing, spacing, control of disease and of pest, plucking, pruning, and manufacture ; all these present new challenges in the culture of tea — challenges to the TRI and the industry alike — challenges that are being met by the new and younger generation of able scientists and keen planters of today with enthusiasm, ability and that essential willingness to study and to build on earlier foundations.

But it is not enough for there to be new and younger generations — of planters and scientists working together on these problems, however able and keen. They must be the *right* kind of scientists with the right outlook, putting the industry's long term need for sound and relevant information always ahead of more personal or ephemeral interests. On its past, the industry is required to breed and train, as it is doing, *planters* who can take on where yesterday's *scientists* left off, with such informed ability that they catch up with and keep abreast of the research of today : thereby the industry's understanding and knowledgeable criticism of its progress in research will continue.

I believe that agriculture has a wider place in the world's future, than even that of providing food for ever-increasing numbers and, by export, exchange for other essential commodities. It has something for every human being engaged in it, something which brings together in common understanding and, above all, co-operation men of every nation, race and creed. Ceylon, the loveliest country in the world, with its great human industries of tea, rubber, coconuts and rice will with the years to come, depend even more heavily upon progress in these industries — progress in which human hand and mind retain their rightful place, ever more efficiently supported, but not supplanted, by the chemical and the machine.

Merely a visionary hope ? Perhaps — but the challenge is with everyone of us today and we cannot evade it. Only history will later tell how you met it.