

The misapplied scientists

By BRIAN FORD

IF PRESENT educational trends are any guide, the graduate scientist is not in any sense well fitted to occupy a senior position in industry. There have been many succinct, even mellifluous arguments to the contrary (the recent *cri-de-coeur* by Cecil King in the *New Scientist* springs to mind), but, as things stand, there is little to support them.

The argument in favour runs, in essence, like this: industry needs well-trained, objective, thoughtful men who have been trained over a period of years in the methods of thought and analysis, and who are therefore fitted to take on the burdensome responsibilities of management. Scientists fit the description perfectly; therefore use scientists.

But the argument has premises that are unsound. Where is the scientist who has ever, in university, been trained in this way? Where in the university science curriculum is the reference to seminars in thought-training? Who is ever trained to educate people in this way, and where are the channels of selection for such people? They do not exist. There is no such altruistic education in science today, and the results of scientific education are as fitted to run industry as they would be to fly to the moon.

In practice we find that, whatever may be the ideals of education and training in the field, the actuality is staggeringly misorientated. The course through which the science student is expected to pass is based on the haphazard results of a kind of perverted evolution, a scheme of training that has, without any drastic and sudden changes of emphasis, meandered helplessly from the mediaeval strictures of doctrine and discipline into the blinding light of modern technocratic advance without attempting to adapt to the difference.

This, sadly but undeniably, is where the system is at fault. The demands of the modern age of progress necessitate a broad-based, sound programme of sophisticated training. But the educational pattern that we have inherited is based on nothing so promising; it has descended from centuries of arbitrary self-propagation and no one has ever attempted to bring it suddenly up to date in the manner that, by any standards, is necessary.

A student who can put behind his name those almost magical (certainly impressive) letters B.Sc. is assumed to be a scientist, disciplined and trained until his brain is clear-cut, hardened to the rigours of academic analysis, directed and channelled by years of study into a lively, clinical and utterly intelligent machine for analysis and decision-taking.

In reality, he is an inexperienced, gauche young man who drifted from school into university and has spent the three years there learning the structure of fossil skulls, memorizing by heart the details of the classifica-

tion of flowers (virtually every family that exists all over the world), repeating, parrot-like, taxonomic tables until they are dinned into the memory for subsequent re-hash one sunny afternoon in July and consigned to paper . . .

Certainly it is undeniable that a good memory is an asset, and that hard work to a disciplined pattern is sound training for any nine-to-five; but this form of training confers *only* those traits—and they are found in any of a random sample of working people who have never been near a college in their lives. Three years at university are a pretty grim obstacle race if all that is selected at the end is common to many uneducated individuals in the first place.

Free intellect

The qualities that a scientist should need are founded on originality (which the present university system stifles totally), on lack of conformity to a healthy extent (contrary to the spirit of the college rules), on a free and original intellect (tolerated by the system, but not in any way trained, encouraged, or selected) and by an enthusiastic desire to get on with the job and see it through (which any solid university course will thrash out of all but the most stoical).

So it is undeniably true to suggest that scientists, in the sense of wise, all-knowing, intelligent individuals, are the men needed in industry today and would be a source of stability and insight in the modern governmental system. But what is generally missed is the point that universities do not educate people like this at all, in the main.

Certainly there are gifted and far-sighted individuals in the colleges who have instituted liberal studies which supply some broader insight into the student of the world in which he lives, but the true needs of the scientist—the contact with great and inspired brains which train and select him for a life of mental activity of the highest order—are totally neglected.

The man who, on the other hand, joins a firm by entering at the bottom and by working his way up has done so by proven ability, and by mental prowess in the very fields where it is needed—performance, or he would never have succeeded. He is most likely to be the man with the best knowledge of business and the most developed grasp of the realities of commercial life.

The thesis advanced, then, is false. In principle it could hardly be more sound—but at present the unrest and disorganization of university training (which the students, thank goodness, have at last begun to reject wholeheartedly) is in no way directed to this end.

When scientists are really trained to be scientists, and when the mindless memorization of facts as an arbiter of educational prowess has been superseded by something faintly more related to intelligence and objectivity, then their selection and use in industry will become obvious and widespread.

But at present the science graduate is the last person to place in a position of seniority within a commercial concern.

Brian Ford is a consultant scientist, writer and broadcaster, and edits "Science Diary".