

Editorial

Some years ago, more than thirty in fact, I listened to an undergraduate debate, in which one young debater, to emphasize that Man should be more humble than he was, said that, despite all his cleverness and achievements, he could not make a single drop of human blood. His opponent, showing more youthful confidence asserted that, while that was true now, one day science would be able to achieve such things. I was reminded of this long-ago exchange recently when I read of some scientist who had been brilliantly successful in turning peanuts into all manner of interesting products, but who had never been able to turn any of these products into a peanut.

Both stories illustrate the apparent futility of Man in the face of the wonders of nature—or of a higher being, if you like, but they also illustrate his abounding faith in his abilities to conquer seemingly impossible problems. It is probable that the notion of synthesizing blood has become more remote as we learn more about the complexities of the material, yet this has not stopped scientists from still being confident that one day all will be known about everything. The Human Genome Project is an obvious example.

There are some problems on which scientists are divided on the likelihood of solution. One of these relates to the use of animals in research. Not too long ago, almost all biochemical and biomedical researchers would have argued that animals were essential for research, the only question being which animal served as the best model for man in given circumstances. Find the right model and there would be great strides forward. The fact that no animal was quite like Man soon provided ammunition to those who claimed animal experimentation was never justified. In recent years, there has been a serious re-examination of the use of animals in research. There are still those (and they may well be right) who feel that animals will never be replaced. At the other extreme, some scientists are claiming that there are sufficient in-vitro techniques to obviate the need for experiments on living animals, but it is sadly not true that any such method

has been whole-heartedly and unreservedly accepted by everyone. Nevertheless, true to his nature, *Homo sapiens* will undoubtedly strive to continue to work towards this goal despite the pessimists, and who could not wish him success.

This is all a prelude to the attitude of the *Journal of Pharmacy and Pharmacology* on animal experiments. I do not believe it would be right or desirable to lay down a firm policy, which would last for all time, but undoubtedly we have a duty to encourage good and responsible science, and to accept that the world will change, and for the most part it will change for the better. Thus, it is true that experiments that were quite acceptable ten years ago would be frowned upon now; it may be a moot point as to whether some procedures have been dropped because they were invalid or whether they became repugnant. Readers of this journal, and some contributing authors, will find that we are asking referees to be more critical of the procedures described, and no matter how valid the subsequent experiment, the means of obtaining samples could well be a reason for rejection of papers in future. The United Kingdom has legal guidelines for animal experimentation and it is our policy not to accept papers describing experiments which would not be allowed in this country, as far as we are able to ascertain that this is so. This is not to say that the Journal will accept procedures up to this limit, but this would seem a reasonable guideline to work within.

Scientific advances have been made in the past using experimental animals, often in horrific experiments by the standards of today, and surely there are still advances to be made using careful, well-planned and responsible protocols. But there will be advances in replacing animal experiments and the Journal would wish to be in the forefront of this area of research and welcomes such work which has equally careful, well-planned and responsible protocols.

JOSEPH CHAMBERLAIN