Letters

Prescient

Oscar Hertwig (1849–1922), professor extraordinarius of anatomy at the University of Berlin, generally remembered for his basic discovery of the process of fertilization, developed a theory of particulate inheritance before the recognition of the Mendelian laws. In the present decade, which has witnessed fascinating discoveries on the nature of the genetic code, an excerpt from his book *The Cell* (Macmillan, New York, 1895) merits the historian's interest:

> The hypothetical idioblasts . . . are, according to their different composition, the bearers of different properties, and produce, by direct action, or by various methods of cooperation, the countless morphological and physiological phenomena, which we perceive in the organic world. Metaphorically they can be compared to the letters of the alphabet, which, though small in number, when combined form words, which in their turn, combine to form sentences or to sounds, which produce endless harmonies by their periodic sequence and simultaneous combination [p. 340].

G. P. RÉDEI
University of Missouri, Columbia

The Physician and the Drug Disputes

Lasagna's article "Problems of drug development" (24 July, p. 362) placed insufficient emphasis, it seemed to me, on the role of the physician in the administration of medication. To date the major onus of providing safe and effective medicines has been divided between the pharmaceutical industry and the expanding Food and Drug Administration. The medical profession, in not being given a modicum of blame for past errors (thalidomide, triparanol), and in not being included among the groups to whom recommendations concerning medication have been made, has suffered a grevious insult. By these apparently complimentary but actually patronizing omissions, the physicians have been told in effect that, since their prescription writing has been indiscriminate and often unwise, judgment in matters of materia medica will be taken from their hands and made instead the business of government and industry.

A physician's prescription rights are virtually limitless. He can, if he chooses, administer medicaments concocted on his kitchen stove. His judgment has been traditionally respected and his freedom trammeled only by his conscience, knowledge, and experience. Yet something has happened to this collective judgment. We see the same physician who approaches poisons such as digitalis and quinidine with the utmost caution pounce avidly on chloromycetin for minor degrees of illness; or the man who wouldn't think of administering tetanus antitoxin without prior skin testing and other safety measures give injections of penicillin to any office patient who demands it, a procedure as lethal as the indiscriminate use of tetanus antitoxin.

We can only conclude that the discrepancy in judgment reflects a discrepancy in the teaching of pharmaceutics in the medical schools and beyond. Whereas digitalis, quinidine, tetanus antitoxin, and so on were approached with reverence for their awesome powers and fearsome dangers, the newer drugs are probably discussed with the familiarity that breeds contempt.

By imposing restrictions on the pharmaceutical industry to achieve ends that could be accomplished by a self-disciplined medical profession, we may be thwarting the release of many beneficial remedies. For example, strict laws about efficacy might have prevented the appearance of iproniazid, which was introduced for the treatment of tuberculosis, but which turned out to be the first of the "psychic energizers." The unrestrained use of thalidomide in early pregnancy resulted in tragedy, but this drug, which is now not obtainable, might be of inestimable value in the treatment of the aged. Which test of efficacy would one propose for aspirin? Could gold salts, with their recognized 30-percent morbidity rate in some uses, possibly receive FDA approval today?

Ultimately a drug has to pass or fail in the hands of the physician; and even the most elaborate laboratory precautions cannot protect the entire public from individual idiosyncrasies or from the unsuspected toxicity of certain drugs when taken in conjunction with certain foodstuffs.

I don't plead for a laissez-faire attitude, but I do claim that if the medical schools taught the same regard, reverence, and fear of the new drugs as they do of the old, the physician could be trusted to become an equal or even greater-than-equal partner in the struggle for the safe application of poisons in the treatment of disease. The role of the government is commendable, but it cannot arrogate to itself prescription rights unless the physician fails to reclaim his traditional prerogatives.

CHARLES HARRIS
534 Elkins Avenue,
Elkins Park 17, Pennsylvania

Science in Less-Developed Countries

A dichotomy of opinion characterized the United Nations Conference on the Application of Science and Technology for the Benefit of Less-Developed Areas, held at Geneva in 1963. The opinion voiced by representatives of more advanced countries was that primary emphasis should be placed on applying existing technology to the solution of economic problems and to elevating standards of living in less-developed areas. In contrast, a substantial number of representatives from less-developed areas emphasized the desirability of developing in their countries the capacity for contributing to new scientific knowledge, rather than relying solely on adopting existing technology to meet their pressing needs. This dichotomy of opinion, and in particular the issues relating to the latter opinion, have received scant consideration by the scientific community of the United States.

During the past year I have attempted to explore these issues through correspondence and conferences with a number of scientists and science administrators. This inquiry indicates that scientists from the United States might participate more effectively in encouraging the growth of science in currently less-developed areas of the world. To do so requires a greater opportunity for scientists (those from government and industry as well as from universities) to spend appreci-