Letters

Osteopathy

Before sounding off about a recent reference to osteopathic medicine in this department, I should like to make clear that I think scientific medicine is great and, as a practicing D.O., I gratefully share of its fruits. Scientific medicine belongs, however, to science, not to medicine, and certainly not to any school of medicine. The practice of medicine is, at best, an art. It is more than a collection of techniques, however skilled. I address my thoughts here to osteopathy as a going art.

I am leading up to the letter of John T. Flynn ("The legacy of the Flexner Report," 29 Oct., p. 554) and some of his implications relative to "the kind of care the great mass of American people receive" and who takes care of them. Flynn unceremoniously lumps osteopathy and chiropractic together on the one hand, as opposed to old-school medicine on the other. This is an ancient strategy, used not to encourage thinking but to ring an old Pavlovian bell. (The bell must be crackling: it always used to be osteopathy, chiropractic, and Christian Science). Flynn asserts that the D.O., along with the chiropractor, has "a faulty, to say the least, understanding of pathology," and he makes the rather wild suggestion that these two groups take care of "the great mass of American people" who unlike "the more sophisticated and well-to-do segment of our population," don't know any better.

Flynn wonders if "anyone has ever made a clear-headed study of the kind of care the great mass of American people receive." The great mass of American people are of course taken care of by the M.D., if only by virtue of his numbers. And I would say, without study, that on the whole he is doing a pretty creditable job; but that were he a little less specialized and a little more generally spread around the great mass would be the gainer, as would he. (It might be of interest that in the osteopathic profession the ratio of general practitioners to the various specialists—including pathologists—is said to be a comfortable three to one).

Regarding the implication that the D.O. must give pretty sorry care because he doesn't know classic pathology, I would remind Flynn of the well-publicized episode of a few years back in which some 2000 willing D.O.'s along with their institutions (including the osteopathic college there, and its faculty), were "taken in" as ostensibly good M.D.'s (and a good medical school) by the California medical society under the aegis of the A.M.A.—taken in as is, without any refresher work, in pathology or anything else, the only requisite being $65 cash in advance. I am not proud of this. I only point it out as evidence of pretty loose thinking on Flynn's part—or somebody's.

I shall have to leave it to someone else—I would hope an educator or an informed researcher in one of the biologic sciences—to make an authoritative reply to Flynn, for I would imagine readers of *Science* are generally less informed, or more misinformed, about osteopathy than about any other of the learned professions. All I know is that the D.O. by virtue of his training, from way back, in the holistic approach (at least in the osteopathic schools I know about) by and large becomes a pretty good family doctor, a pretty good G.P. Many in allopathic medicine pay lip service to the holistic, patient-centered philosophy; not a few embrace it; but only in osteopathic medicine, I would say, has it been taught as a professional way of life. Medical thinkers are concerned about the fragmentation of medical practice into narrow specialty groups and what that trend is doing to patient and doctor alike. As Morris Fishbein says in his editorial, "Gazing into a crystal ball," in the 10 September issue of *Medical World News*, " . . . if the bright and enterprising medical student were molded into such a [specialty-group-centered] shape the outlook for scientific progress would be dim indeed. The sweeping tendency to undervalue the individual presents a threat to patient and physician alike." So far, at least, osteopathic medicine has, I think, rather successfully resisted this trend.

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Wiener's Word

Panos D. Bardis (Letters, 12 Nov., p. 827), describing the use of the term *cybernetics* by Plato, and its later use by Ampère, refutes Norbert Wiener's claim, in an article in the *Encyclopedia Americana* (1964), to having invented the word. It would, however, be useful to know when that article was actually written. In the 1954 Anchor Books edition of *The Human Use of Human Beings* (Doubleday, Toronto), Wiener said (p. 15) about the word he had "felt constrained to invent":

> Incidentally, I found later that the word had already been used by Ampère with reference to political science, and had been introduced in another context by a Polish scientist, both uses dating from the earlier part of the nineteenth century.

The habit of using classical Latin and Greek roots for technical terms may be the source of the difficulty in rationally constituting really new technical terms. Perhaps roots from languages with shorter literate histories might be used to advantage by those who would be original in their specialized terminology. I suggest, as likely to be relatively free of such difficulties, Choctaw, Swahili, or Tagálog; though Linear B might offer some safety despite the antiquity of its literature.

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. . . In his book *Cybernetics* (Wiley, New York, 1948, p. 19) Wiener describes the application of the word to the science he helped organize as follows:

> After much consideration, we have come to the conclusion that all the existing terminology has too heavy a bias to one side or another to serve the future development of the field as well as it should; and as happens so often to scientists, we have been forced to coin at least one artificial neo-Greek expression to fill the gap. We have decided to call the entire field of

control and communication theory, whether in the machine or in the animal, by the name *Cybernetics*, which we form from the Greek κυβερνητης or *steersman*. In choosing this term, we wish to recognize that the first significant paper on feed-back mechanisms is an article on governors, which was published by Clerk Maxwell in 1868 [*Proc. Roy. Soc.* (*London*) March 5, 1868], and that *governor* is derived from a Latin corruption of κυβερνητης. We also wish to refer to the fact that the steering engines of a ship are indeed one of the earliest and best developed forms of feed-back mechanisms.

Many writers, Greek as well as French, French as well as Italian, must have used the word, since it appears to be a common word meaning the "steersman's art," and that phrase, while quaint today, must have been as commonly used as *navigation* or *driver training*. Calling Duco *Duco* or Kodak *Kodak* called for more imagination and commercial savvy and were genuinely coined, not merely borrowed. But what difference does it make? Words after all are, as Henry Ward Beecher said, "pegs to hang ideas on." And Wiener and his circle certainly succeeded in doing that.

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Looking Ahead

In arguing for greater support of gerontology, Robert R. Kohn (Letters, 5 Nov., p. 685) says, "Aging processes are . . . of more personal concern to us than, for example, mantle-drilling or the space program. . . ." And rightly so.

According to a story popular in Germany (East and West) during the 1950's, Gottwald was checking the budget one day, and the dialog with his advisers went about as follows:

"What's this? An addition of 100,000 marks for the grade schools? No. Denied. An addition of 500,000 marks for the advanced schools? No, denied."

His advisers handed him the next batch, and he continued:

"An increase of 300,000 marks for playgrounds and parks? No. Denied.

"Another 50,000 marks for libraries? No. No. No.

"Add 150,000 marks for children's hospitals and lying-in homes? Denied."

So it went. He cut every departmental budget until he came to the one for prisons.

"What's this? No increase for prisons? The same budget as for last year? No. Double it! Allocate at least a million marks for prison hospitals, libraries, and recreation centers. And double the operating budget."

One of his advisers remonstrated, "But sir, you have cut all the other institutions, particularly the schools. Now why do you increase the budgets for the prisons?"

Gottwald stared at him meaningfully for a minute, then explained, "We've been to school."

As the man says, we can all expect to be aged. Shall we stint the plans for improving that condition?

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Messages from an Elder Scientist

. . . In his article on the development of the chemistry of solutions ("Order from chaos," 22 Oct., p. 441) . . . Joel Hildebrand delineates the difference between a true scientist and a mere practitioner. The one has schooled himself to understand; the other has devoted his academic life to learning all the recipes. Here is a message so vital to a beginning scientist that he hardly dare disregard it. . . .

The article carries also, by example rather than precept, a message about effective communication among scientists. It is replete with examples of communication at its best. Consider this statement from his discussion of scientific prediction: "The odds are extremely high for predicting an eclipse, . . . near zero for the time when John Doe will die." He might have written it this way: "Prediction of an eclipse can be accomplished with an extremely high degree of accuracy, but it should be noted that the probability factor changes considerably in the case of predicting the time at which life ceases for a human being." Naturally, the need for good communication becomes much more imperative when an elder scientist is trying to teach a younger one. The stuffed-shirt approach to science writing never inspired anyone. Yet how many elder scientists continue to expound their ideas in a writing style like that of a master's thesis. . . .

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