

Under this heading there appeared, last year, in the *Journal of the American Medical Association* [185 (1963) 609 (Aug. 17)], a letter from one Dr. C. Balcom Moore, of Walla Walla, Washington, commenting on a group of articles that had been published earlier as a Symposium on Orthetics. Quoting the statement that "A standard nomenclature for the country would be beneficial," he remarked that "this statement should apply very well to the entire section, which includes a bunch of words which I, as a urologist, had never run across before." He was sure that there were many other doctors in the same boat as he, who would have difficulty in understanding what the authors of those papers were talking about.

This complaint echoed our own feelings in the matter. Dissatisfied with the definitions given in the medical dictionaries, we had long since asked the editor of the *JAMA* about that terminology, commenting that our ignorance of the subject made us feel—as used to be said of Americans who gave evidence of being in the tropics too long—that we had

"missed too many boats," or at least too much of the general medical literature. That letter was referred to the Archive-Library Department of the AMA, which generously supplied a quantity of photocopied literature. One article, a special one written on request for *Rehabilitation Literature* [24 (1963) 98-107] by A. Bennett Wilson, Jr., B.S.M.E., has the following instructive footnote.

Orthotics is a coined word designed to embrace the field of orthopedic bracing. In some quarters the word *orthotics* has been used, but in 1959 the Orthopedic Appliances and Limb Manufacturers Association (now American Orthotics and Prosthetics Association), after considerable consultation with numerous lexicographers, approved *orthotics* as the most appropriate nomenclature. *Orthotics*, incidentally, is not found in the medical dictionaries consulted.

In those sources *orthosis* (from the Greek, meaning a making straight), is defined briefly as meaning "the straightening of a deformity," with *orthotic* as the adjectival form, a definition which is quite inadequate. An "orthotist" is a "specialist in the fitting of orthopedic braces."

The significant word here is *braces* (not met in the inadequate definitions of *orthotics*) not *orthopedics*, for *orthotics* has nothing to do with orthopedic surgery but rather with its after-effects.

*Orthopedics* (Greek *ortho* and *pais*, the latter meaning child), refers to orthopedic surgery, which according to the American Board of Orthopedic Surgery (cited by Dorland) is "specially concerned with the preservation of the function of the skeletal system, its articulations and associated structures." There is, nevertheless, confusion in one of the dictionaries (Stedman), in which *orthosis* appears as one of the synonyms for *orthopedics*, and the word itself is given precisely that definition.

The letter of Moore mentioned was referred to one of the participants of the symposium, who in reply pointed out that the term in question was first used in connection with an exhibit of braces, splints, corsets, crutches, wheel-chairs, and other appliances used to increase the functional capacity of patients with severe disabilities. His own definition of *orthosis* (using that officially preferred name instead of *orthosis* which he used in his text), is as follows:

"An *orthosis* may be defined as any medical device applied to or around a bodily segment in the care of physical impairment or disability." . . . *Orthosis* can be most easily understood when compared with 'prosthesis.' A *prosthesis* is an 'artificial replacement of a missing part,' whereas an *orthosis* is applied to an existing part. An *orthotic* device is the same as an *orthosis*. *Orthotics* is simply the designation of the field, and an *orthotist* is the individual who makes the *orthotic* device."

As indicated, the term "prosthesis" and its grammatic derivatives have to be distinguished. The article by Wilson supplied by the AMA, which is entitled "Prosthetics and Orthotics Research in the United

States," starts off with a discussion of artificial limbs. Elsewhere it is said of a certain person that he "teaches precisely how to fit artificial arms and legs at the prosthetics school, and how to brace ineffective muscles at the orthotics school," both schools being at the University of California at Los Angeles.

The dictionary definition of *prosthesis* (from the Greek, addition), is replacement or substitution; an artificial substitute for a missing part (including dentures and artificial eyes). A prosthetist is given, briefly, as "one who makes artificial limbs"—although there may perhaps be room for discussion as to the adequacy of that definition.

A particularly interesting prosthesis, apparently unique, is reported in a recent issue of *JAMA* [188 (1964) 1000-1002]. An infant was born with complete agenesis (i.e., lack) of the left leaf of the diaphragm, which was repaired at once by insertion of a piece of large-knit Dacron fabric. The child was 2 years old at the time of the report, and quite normal. The operators certainly supplied a substitute for a missing part, but they were not "prosthetists" if that term is limited as indicated.

Indicating that "orthotics" is not so new after all, there is an American Board for Certification in Orthotics and Prosthetics, and also an American Orthotic and Prosthetic Association. The Board has certified 479 persons in orthotics, 344 in prosthetics, and 281 in both subjects. This Board also maintains a Registry of Certified Prosthetic and Orthopedic Appliance Facilities, and there are now (including 3 in Canada) 128 facilities certified in orthotics, 87 in prosthetics, and 152 in both disciplines. Three medical schools now offer courses "for the orthotic and prosthetic profession."

In leprosy, prosthetics is clearly involved when an amputated foot is replaced by an artificial one, and orthotics is involved in such a procedure as the splinting of fingers to correct deformities. The various operations for that purpose obviously belong to the department of orthopedics, but many of the maneuvers employed these days are of the nature of physical therapy. One wonders what the answer would be if it should be asked just how the "rocking boot" used in connection with trophic ulcers should be classified.

—H. W. WADE