

apparent, closer study reveals that even in the case of sales to retail druggists, there is some price competition via quantity discounts and the shipment of "free goods" in excess of the invoice quantities ordered. In the hospital purchases markets, bids are frequently requested, and in some product lines, sharp price competition may develop.

Product competition proper is more easily achieved in the chemical industries than in some other fields. Research effort, whether domestic or foreign, public or private, may culminate in the discovery of a new compound with important therapeutic applications. If one firm is awarded the patent, other firms will attempt to modify the molecular structure of the compound in order to discover a "different" and patentable therapeutic agent which will in all probability be of use in the treatment of the same classes of disorders as the original drug, but which will hopefully be more potent, or less toxic, or will at least yield a different variety and incidence of concomitant side effects.

Product differentiation is seen in its purest form when several firms obtain licenses from the patent holder and then proceed to market the identical compound under different names, each of which must then be intensively advertised. The choice of a name for such a drug constitutes an exercise in product differentiation at a higher level than is usually encountered in the commodity market, since the name typically abandons or repudiates description of the good and refers instead to nothing outside itself, stressing only its abstract (and presumably unique) identity.⁵⁹ Product differentiation efforts are of course also enlisted in behalf of products which are physically different from each other. Since "ethical" drugs are ethical in the sense that they cannot be bought over the counter or advertised to the public at large, the market consists of the private physicians and hospital pharmacists who can order them. This is a relatively small and well-defined market which can be intensely saturated by advertisements and the employment of itinerant salesmen. There is, in fact, some evidence that the intensity itself, at least in some quarter.⁶⁰

The role of research as the driving force behind both the search for new products and the devising of minor molecular modifications on old ones should be considered separately at some length. Lack of space, however, allows only a brief summary. Spokesmen for the major drug firms invariably defend the height of their prices, or the gap between computed costs and market prices, by reference to the vast sums spent on research in the interests of advancing the cause of health and medical science. It is also asserted that in the absence of the patent incentive, research would disappear. Both statements may be questioned. It may be doubted that they can be reconciled. It is probably difficult to convince an economist that the primary purpose of drug research is not to increase profits. This is economically desirable only if no cheaper way can be found to insure an adequate supply of new and improved drugs. That research is the monopoly of the large and profitable firms, or that the most profitable firms do most of the research, may be questioned. That research outlays are a major or even a very significant factor in the total cost picture for most major drug firms may further be questioned. Finally, that the patent privilege is a necessary incentive to elicit truly productive drug research may be disputed. As a brief summary of the evidence in regard to these issues, the following facts must suffice:

1. The size of the research budget as a per cent of the sales dollar varies inversely with the size of the firm. For a group of 22 large firms and two representative smaller firms, the most profitable firm (Carter, with a profit before taxes of 43.8 per cent of sales) had the smallest research budget (2.7 per cent of sales), while the least profitable firm (Panray, 10 per cent of sales) is estimated to have had the highest relative research budget (15 per cent of sales), during the year 1959.

⁵⁹ An example may make the contrast with the usual type of product differentiation by brand name more apparent. Dr. Solomon Garb of the Albany Medical College of Union University submitted that if the drug makers took over the manufacture of canned beans, then rather than selling "Pfizer's Beans" or "Parke, Davis and Co. Beans" they would prefer to coin novel and unique anagrams such as "Sneabs" or "Nabes," or adopt under-descriptive slogans like "Lo Cals" or "Hi Pro's" and abandon entirely the generic noun. *Id.*, pt. 18, at 10481.

⁶⁰ See particularly the testimony of Drs. Bowes, Console, Seidell, Weinstein, Bean, Garb, Leake, and Meyers, *id.*, pt. 18.