

News and Comment

Consulting: Advice for a Price Has Become an Important Factor in Finances of Many Scientists

One of the least-discussed perquisites of membership in the scientific community is the entrée that it provides to the golden land of part-time industrial consulting, a territory where devotees of the pursuit of knowledge permit the commercial world to use their brains or reputations for a price.

The financial details of these encounters between science and business are understandably hard to acquire, since businessmen don't like to publicize their costs, and most people, scientists included, don't like to publicize their rewards. In both cases the reticence derives, at least in part, from fears that disclosure of the rates involved may inspire discontent, envy, or possibly a motivation for offering less or seeking more. Nevertheless, on the basis of extensive inquiry and assurances, where requested, of anonymity, it is possible to throw some illumination on the consultative market place, and related matters.

In its simplest form, the consulting relationship involves nothing more than a *quid pro quo*: money for knowledge. But since money and knowledge are among the least simple of things, it was perhaps inevitable that consulting would get to be a complicated business. There are universities, for example, where faculty recruits are assured industrial consulting opportunities to supplement poor salaries; there are companies that seek prestigious academic consultants, not so much for their knowledge as for the weight that their names will carry with government contracting officers; there are scientists who happily accept whatever fee is offered for their consulting services, and there are others who make it clear that they come high—take it or leave it.

In the realm of consulting and scientific advice there is also new institutional development, in the form of a young company called Quadri-Science,

Inc., of Washington, D.C., an assemblage of half a dozen scientists, including three Nobel laureates. In the words of one scientist widely experienced in consulting and familiar with Quadri-Science: "Quadri-Science is a very sensible approach to providing scientific advice for industry. Why should a scientist let his brains be picked for \$100 a day on matters that can be worth millions to a company? Quadri-Science has a better idea. *They want a piece of the action.*" By which he meant that Quadri-Science takes payment in stock.

The extent of the scientific community's involvement in industrial consulting is difficult to determine, but it appears safe to say that on the campuses of major universities the nonconsulting senior scientists and engineers are in the minority. At Stanford University, for example, it is the opinion of one department head that "if any full professor around here isn't a consultant, it must be because there's something wrong with him." Many universities, out of a desire to promote a closer relationship between industry and basic research, encourage faculty members to serve as industrial consultants—but usually limit their service to one day a week. Among these is M.I.T., which can probably match any institution in the country in consultants per faculty position.

The scale of remuneration for consulting is something that has developed more by custom than by the forces of the market place, possibly because the consulting has generally lacked one of the essentials of a market place—communication about prices. In general, no firm goes below \$100 for a day's work—which is the maximum that applies to consulting for the federal government. Under this ceiling, the federal agencies that employ consultants manage to work without any apparent pattern, principally because of different statutory requirements that they have accumulated in their legislative history. The National Institutes of Health generally provides a fee of \$50 a day plus

travel expenses and the standard government expense allowance of \$16 a day. In the National Science Foundation payment varies from nothing for certain categories of consultants up to \$75 a day. Members of NSF's top advisory body, the National Science Board, receive \$50 a day. The National Aeronautics and Space Administration pays \$50 to \$100 a day as a consulting fee—the higher figure is for "distinguished" consultants. Outside of, but close to, the government, the National Academy of Sciences pays nothing but expenses for members of its numerous advisory panels and committees. All of the fee-paying agencies report that it is not a rarity for a consultant to decline the fee, an act which agency officials attribute less to altruism than to upper-bracket tax intricacies.

Within the drug industry it is a common practice for major firms to pay annual retainers to their consultants, but the amounts vary substantially not only from company to company but also within companies. One major East Coast firm reports that it annually budgets a certain percentage of its research and development expenditures—the amount comes out to be around \$175,000—for consulting fees. This amount is shared by approximately 70 consultants, most of whom are on long-standing retainers. For persons not on retainer, the fee is \$200 to \$250 a day.

One drug firm reports that it has 55 consultants on retainer at an average annual rate of \$3500 each. And another states that it pays its consultants \$6000 to \$12,000 a year each, in return for which the consultants attend week-long meetings with the in-house staff three times a year.

According to the research director of one drug firm, "Consulting turns out to be a good deal for everybody. It gives us an 'in' with the universities; it doesn't really cost us much in terms of our annual budget, but the retainers we pay mean a lot to the people who are getting them. And once in a while we get some useful work out of them. I think we can chalk up a lot of the money to public relations."

With few exceptions, it appears that industry sets the fees for consulting, and few questions are asked. One of these exceptions involves a well-known physical scientist with a specialty that has caused industry to beat a path to his laboratory. "I set the price," he explained. "I offer them two options. Take

me or leave me. My annual retainer is from \$2500 to \$12,000 a year. And for the past five years, I've averaged \$50,000 a year in consulting fees. I spend a total of one month a year consulting." Competing firms generally don't like to share consultants, but this affluent scientist explained that his clients include competitors. "If it bothers them, I remind them of the options." He added that his relations with industry provided rewards other than money. "It gives me a chance to place my mediocre students. The good ones go to universities. The others go to industry."

This business-like approach to consulting appears to be something of a rarity. Much more common is the scientist who is called upon by an industrial firm to provide counsel on a given problem or to agree to make himself available if problems arise within his professional area. In many of these cases, the offer of a consultantship is money from heaven, and whatever the company offers, the scientist happily accepts—and sometimes with a naiveté that must arouse the wonder of the business world. For example, a young physical scientist was invited to serve as a consultant to the research division of a large industrial firm. The fee, he was told, would be \$125 a day. He explained that he would prefer to start at \$100, and, if the company found his services satisfactory, the amount could be raised.

While many scientists are altogether pleased with the going rates of up to a few hundred dollars a day, or several thousand dollars a year for long-term consulting, there are others who feel that industry has been paying incredibly cheap rates for what it's been getting. As one scientist views it: "A multi-million dollar company calls in a top-flight physicist, and for a few hundred dollars he gives them the benefit of twenty years of training and experience. He feels happy about getting \$200 for an afternoon of conversation, but what he doesn't realize is that his advice can be worth millions of dollars to the company."

To this argument, industrial executives reply that the consultant bears no responsibility for the worth of his advice; he is presumably well occupied with other matters, and just occasionally steps into the industrial scene to provide a bit of counsel on matters that occupy the full attention of others.

"The reward that the consultant gets is pretty well in line with his contribu-

Strauss, Teller, Libby To Serve on Goldwater Science Task Force

The formation of a Task Force on Science, Space, and the Atom is expected to be announced shortly by the Republican National Committee. The task force, which will be headed by Lewis Strauss, chairman of the Atomic Energy Commission from 1953 to 1958, will provide advice on scientific and technical matters for Senator Goldwater's presidential campaign. Other members are:

Edward Teller, professor at large, University of California, Berkeley, and associate director of the Lawrence Radiation Laboratory.

Willard F. Libby, Nobel laureate in chemistry, professor of chemistry, UCLA, and director of the Institute of Geophysics and Planetary Physics.

Shields Warren, professor of medicine, Harvard Medical School, and a consultant to the Atomic Energy Commission.

General Arthur Trudeau (ret.), Army chief of research and development, 1958-62; currently president of Gulf Research and Development Corporation.

General James H. Doolittle (ret.), former member of the Air Force Science Advisory Board and of the President's Science Advisory Committee; currently a director of Thompson Ramo Wooldridge and other companies.

The National Committee expects that other members will be added in the course of the campaign. In addition, Citizens for Goldwater is in the process of forming an organization of Scientists and Engineers for Goldwater.—D.S.G.

tion," as one industrial executive sees it.

An opposite view is inherent in the mode of operation of Quadri-Science, Inc., whose members include Harold Urey, of the University of California, Polykarp Kusch, of Columbia University, and Joshua Lederberg, of Stanford University—all Nobel laureates—and also James Van Allen, of the State University of Iowa; Samuel K. Allison, director of the Enrico Fermi Institute for Nuclear Studies at the University of Chicago; and Ralph Lapp, physicist and author of numerous articles and books on science and public affairs.

Quadri-Science—the *quadri* refers to the earth, oceanographic, atmospheric, and space sciences—seeks to "capitalize scientific manpower," in the words of Lapp, who serves as the firm's corporate secretary. It functions by making the services of its members available to relatively small, technologically oriented companies. No cash is involved in these transactions; rather, Quadri-Science works with swaps of stock—acquiring stock in the company it serves, while giving the company some Quadri-Science stock. In addition, Quadri-Science members usually serve on the boards of the companies. Numerous advantages arise from these arrangements: Quadri-Science does not have to pay taxes on its stock acquisitions

until the time of sale; since the stock is held over 6 months, there is a capital gains benefit; and the Quadri-Science members have every reason to apply their scientific wisdom to making their clients successful. So far Quadri-Science has been quite choosy in selecting clients. These include the Institute for Scientific Information, of Philadelphia; the Farrington Manufacturing Company of Needham, Massachusetts, which produces optical reading machines; and the EON Corporation, of Brooklyn, New York, which produces electronic instrumentation. Quadri-Science is close-mouthed about how well it has fared, but late last year the *Wall Street Journal* quoted one of its officials as saying that the value of the company's shares had increased about 50 percent every 6 months. Lapp points out that Quadri-Science is not actually in the consulting business; rather, he explains, it is an institutional arrangement designed to assure that scientific competence is properly valued in the marketplace. In any case, its operations are close to the traditional forms of consulting, and if Quadri-Science prospers over the long term, it is likely that other scientists will conclude that they have been setting too low a price for those who would pick their brains.—D. S. GREENBERG