1933, exceeding the maximum velocity previously recorded in the United States. The observatory, now in its second year, is financed by the Blue Hill Meteorological Observatory of Harvard University, and is equipped with instruments and apparatus furnished by Blue Hill, the U. S. Weather Bureau, the Meteorology Course, the Massachusetts Institute of Technology, the Eppley Laboratory, Inc., and the General Radio Company, all of which share in the program and results. There are four observers in residence on the summit. Mr. Joseph B. Dodge, the director of the observatory, operates a well-equipped base station at Pinkham Notch."

A REUTER dispatch from Buenos Aires to the London *Times,* dated March 9, reports that Consul Lars Christensen, the Norwegian whaling expert and explorer, has arrived at Montevideo from an expedition to the Antarctic. He reports the discovery of new land, with a coastline 150 miles in extent. He has named it "Princess Astrid Land." Its position is in Latitude 72 degrees South. In addition the expedition found water of a depth of 10,000 feet in places which had hitherto been marked as land on the charts. Consul Christensen left Capetown in his ship *The Thorshaven* on December 20 with the intention of sailing around the great ice barrier.

DISCUSSION

PROFESSIONAL SERVICE AND CODES

THE American man of science faces a new problem. As a result of the changing rôle that the government plays to-day in our national life, scientists of all kinds may be called upon to decide whether the future of their profession is to be planned in Washington like that of industry and agriculture. For there appears to be a growing tendency to propose codes for professional men.

A nation of enthusiasts, we have rushed into codes with such energy that a government staff of thousands is hardly adequate to keep abreast of the requests for hearings, the arbitration and the clerical details involved. In our zeal, we have acted as though a Code of Fair Competition were a panacea assured of success no matter to what type of workers it was applied.

Big industries, such as textiles, steel and oil, were the first to take the plunge, followed by "the butcher, the baker, the candlestick maker." Then came the trades—printers, carpenters, etc., presenting increasingly difficult problems. Will the professional be next? In view of the difficulties already encountered in what may be described as bordering groups such as newspaper men, the question arises—can the truly professional man in any line of endeavor comply with even the fundamental premise of a Code of Fair Competition? Can he compete?

The essence of professional work is the personal service of a brain especially taught. Law and medicine are outstanding examples. Choice of a lawyer or a doctor depends on his special fitness, the result of an education, training and experience wholly individual. A client or a patient seeks from him the answer to a problem equally individual. The growth of specialization in both fields makes broad competition obviously impossible. Corporation and criminal lawyers can not compete. Yet this quality of specialized service is equally inherent, though too obvious in all professional work. Its personal quality, coloring our most commonplace expressions, is another evidence of its non-competitive nature. How easily we say *"my* doctor."

What can a professional man be said to sell? Doctors, lawyers and scientists are often paid more for knowing what not to do or for not doing something than for anything they do. Their professional opinion is their stock in trade. No human agency can control the rate of its production, determine its market or regulate the conditions of its sale. What rules of fair competition can apply to such a commodity?

How can its price be controlled? Competition usually implies price. Yet the professional man, almost by definition, has none. What costs one client $50,000 may cost the next $100, or nothing but a smile, a handshake and thanks. When the circumstances demand it, professional services often are and should be free. The minister, the dentist, the doctor and any other professional man who honors his profession is under obligation to serve in this fashion those who need him and he recognizes it. I venture to say that millions of dollars worth of the highest class scientific advice is given gratis to the really needy every year.

There is also an obligation in the peculiar confidence involved in professional service. As the service is practically impossible without the client's utmost confidence and frankness so a silence as of the confessional rests on the confidant. This is as true in scientific work as in legal or medical. The character of work done, the methods used, even the fact of service are often strictly the property of the client. A system of enforcing regulations as to competition and charges, involving, as it would, inquiry into the professional man's relations, violates the prime essential of his loyalty to this professional obligation.

Last but not least in the professional man's relation to his client is the fact that he is often called upon to help him meet an acute emergency. This, in all humanity, must release the professional man and his assistants from any limitations placed upon his

hours of labor. Ordinarily, we would take this fact for granted. Does the labor leader want to be told that it is 6:00 P. M. and his agonized appendix can wait until 9:00 A. M. or burst because the surgeon's hours are over? Or his nurses and anesthetist left at 5:30. No, his appendix is removed even if he hasn't a nickel in his pocket and can not speak the language to promise a fee. The sulfuric acid manufacturer whose new plant mysteriously refused to function properly and pours forth clouds of noxious gas on its surroundings faces the same kind of critical emergency. No code of competition can safely tamper with the duty of an honest professional man to his stricken client.

So much for the professional man's wares and the broad obligations under which he sells them. What are his relations with his assistants? They may be called his employees, but they should be vastly more than that. If he is worth working for and they worth hiring, he is also their teacher and they students, apprenticed to their profession in office, laboratory, operating room, sick room or plant. Brilliant youngsters often have the sense to offer to work for nothing under certain men and feel highly paid, as in fact they are, merely by what they are able to learn. The relationship, often quasi-paternal, readily extends itself to more personal affairs—education, financial matters, home relationships. Thousands of men owe their ambition for a higher education and hundreds their actual tuition expenses to the interest of such professional employers. What have the labor union provisions of maximum hours, minimum wages to do with such a relationship?

What advantage does a code for any type of professional offer the general public? Economically, their numbers are too few to tip the national balance, insignificant compared to any major national industry. Their wages can not be raised or lowered arbitrarily—for the sake of all, they must sometimes sell below cost. Their work can not be delegated to spread employment—who would consider hiring two lawyers to work for him in shifts? Mr. Average Citizen, as well as every major industry, is dependent on some form of professional services not only for the conduct of daily affairs but for special emergencies. Cripple the professional man and you threaten the safety of the unforgetable "Forgotten Man"—his client.

W. M. GROSVENOR

GENETICS AND COLORS OF THE SIAMESE FIGHTING FISH, BETTA SPLENDENS

THE Siamese fighting fish, *Betta splendens* Regan, which is at present popular among fish fanciers, has been the subject of breeding experiments in our laboratory during the past three years. A demonstration of various color varieties was given at the Genetics Congress of 1932. These types fall into two groups which may provisionally be genetically distinguished by the presence in one of a color factor C, which is dominant to condition c, in which much less pigment is developed. The first group (C) includes those highly colored fish known to the fanciers as *Betta splendens;* the blue Betta, *B. cyana;* the green Betta, *B. smaragdgreen;* the red Betta, *B. rubra;* and a light blue Betta. *B. splendens,* which is the only specific designation having taxonomic recognition, is the normal wild type, and the body color is of a deep brown and red mixture and the fins may be either red and green or red and blue. The blue Betta is a brilliant blue, often with considerable red in the fins. The green Betta is a blue-green, quite variable in tone. The red Betta is similar to splendens but with a greater development of red and blue. The light blue Betta are a pale blue, with less color in the fins. The colors are produced by combinations of black, red and yellow chromatophores and by reflecting cells or guanophores. The latter appear to be especially important in the blue and green types. These colors are apparently due in large part to the refraction and interference of light from thin hexagonal crystals. The thickness of these crystals can only be approximately determined, but results have indicated a range of from probably less than .3 to .5 micra. These crystal plates then are of such a thinness that refraction and interference of light may account in part for the blue and green colors.

The second group (c) is represented by the type known as *Betta cambodia,* which is predominantly a light yellow with varying amounts of black melanophores sparsely scattered on the body and with red and blue or red and green fins. Crosses of cambodia and cambodia have always produced cambodia only. Cambodia crossed with any dark-colored type usually give approximations of mono-hybrid ratios. In many cases, however, the proportion of cambodia somewhat exceeds expectations, as in crosses between a heterozygous colored type by cambodia the sum of all ratios is 751 dark : 930 light. Crosses between two heterozygous dark types gave total ratio of 1891 dark : 731 light, but in many individual crosses the ratio is closer to two dark to one cambodia. These may indicate the existence of a more complex factorial situation. Homozygous dark by cambodia always give an F_1 which is all dark. Evidence indicates that the relation between the dark types is more complex.

Betta spawn readily in captivity. Adults can be kept in small aquaria, but the rearing of the young requires best of food conditions and large aquaria, as