law goes into effect. Visas will be granted on a first come, first served basis, so the 48,000 already on the waiting list by July 1 will be given priority over professionals from Great Britain, Germany, Sweden, and other countries that have had no waiting list. At the rate of 17,000 a year, it will take almost 3 years to work off the initial backlog. During this period there will be a sharp drop in the immigration of professionals from Western Europe and a sharp increase in immigration from the Far East. The Visa Office reports that in fiscal year 1967 about two-thirds of the third-category numbers were used by professionals coming from China (4454), India (3224), the Philippines (2690), and Korea (1087), the remaining third being scattered among many nationalities. This pattern is expected to continue until Western European professionals start getting their names on the waiting lists and competing effectively for places 3 years hence. By that time the worldwide demand is expected to be such that no great number of professionals from any single country will be able to gain admission. Thus the brain drain from Western Europe may never regain its former volume.

The flow of talent from the Americas will also be inhibited. The law establishes no "preference categories" for this hemisphere, but it does limit Western Hemisphere immigration to 120,000 a year—considerably below the expected demand—so all potential immigrants from this hemisphere, including scientists, will find it more difficult to get in.

Efforts are already under way to ease some of the impact of the new law. The State Department is explaining the implications of the law to nations that may experience an increased outflow of talent, so that these nations can take steps to keep their professionals at home if necessary. And several senators and congressmen will be looking at aspects of the immigration law and the brain drain early in the current session. Feighan's House immigration subcommittee will hold hearings on the law, including an inquiry into "what changes should be made in the classification of preferences." The House subcommittee on research and technical programs, which has scheduled a hearing for 23 January on the brain drain from developing countries, will presumably examine the impact of the new law. And Senator Edward M. Kennedy (D–Mass.) expects to conduct hearings on the immigration law and to resume hearings on the brain drain. Kennedy has told aides he expects to "find a legislative measure" that will ease the backlog problems that have developed in the third preference category.—PHILIP M. BOFFEY

Dartmouth: Medical School Shows Good Recovery from 1966 Blowup

Hanover, N.H. In 1956, when the first big wave of federal research money began to reach the nation's health centers, Dartmouth Medical School, one of the oldest and smallest in the country, embarked on a major expansion program. Long a 2-year institution whose graduates went elsewhere to complete their advanced-degree work, the medical school, in its plans for growth, put special emphasis on doctorate-level work in fundamental science. Thus in 1959 the school added 25 basic researchers to its staff. Eventually the number rose to 70. Back in 1956, according to the current *Bulletin* of the school, there had been seven basic researchers. Meanwhile, the total student enrollment rose from 48 to 96; and discussions were held on developing a 4-year medical degree program, something that Dartmouth, founded in 1797, had voluntarily dropped in 1914 following the Flexner Report's criticism of its clinical training program. By the early 1960's there was no doubt that Dartmouth Medical School had established itself as a thriving basic-research center. However, where it stood as a training group for medical practitioners was a separate, less clear, and often seriously contended matter—so much so, in fact, that between 1964 and 1966 Dartmouth was the scene of a classic academic blowup. By the latter year, 11 researchers had resigned, including six who issued a statement that said, in part: "We came to Dartmouth to fulfill a unique opportunity for education and research in the *basic* medical sciences [italics supplied]. To those of us who are leaving it has become apparent that we cannot effectively accomplish this purpose here." And off they went.

The circumstances that led to their departure are now partially clouded by time. But it is generally agreed that the Dartmouth administration had come to feel that graduate training in basic research was being emphasized to the detriment of education in the traditional therapeutic arts. Apparently this was not a run-of-the-mill teaching-versus-research conflict; rather, it seems to have been a conflict that, in large part, arose from differences over the balance between the teaching of fundamental science and the teaching of medicine. Disputes are said to have arisen also over alleged commitments to make matching money available in the quest for federal research grants. In addition, there was conflict over tenure. A great flow of federal funds was passing through the medical school's laboratories, but Dartmouth held to the policy that salaries for tenured personnel must come from secure, predictable sources, preferably endowment, and not from the sometimes unpredictable, year-to-year grants of Washington agencies.

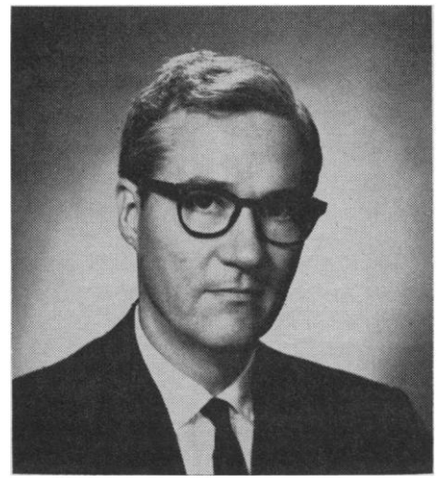
Following the resignations, one top administrator sought to throw an optimistic light on the episode by stating, "The conflict at the Medical School provides no basis whatever for thinking that the School has failed in its purpose or that the quality of its medical education will be impaired. The men who are leaving are competent scientists, but it is significant that to the best of our knowledge they are going not to medical schools but to graduate departments or institutions of

biology or related fields, or into research." To which he added, "It was unfortunate to have differences at the Medical School carried to the point where the faculty was finally forced into a choice between the medical program or the graduate program. This is a professional school and the graduate and medical programs go together. You also can't have one at the expense of the other."

Whatever the case, the departure of 11 faculty members, many of them of considerable professional distinction, did not add luster to a relatively small and aspiring institution. However, amid many dire prophecies, Dartmouth began the process of rebuilding. That process has been under way for nearly 2 years, and, though institutional pulse-taking is a most uncertain art, Dartmouth now gives the strong impression of being well on the road to recovery from its recent trauma. Of course, the unhappiest persons have gone, and those who remained or who have since arrived yearn for peace and progress, and have an understandable inclination to emphasize the positive. Nevertheless, with the unpleasantness of the years 1964 to 1966 still well remembered, and perhaps because of these memories, there is also a strong desire to restore the good professional name of the institution. After all, no one likes to work for a loser.

The rebuilding process began with the appointment, in May 1966, of a new dean, Carleton B. Chapman, who came to Dartmouth from the University of Texas Southwestern Medical School in Dallas, where he was professor of medicine and director of the Pauline and Adolph Weinberger Laboratory for Cardiovascular Research. (Chapman's predecessor, S. Marsh Tenney, had long sought to give up the deanship and, upon Chapman's arrival, returned to the chairmanship of the physiology department.)

With Chapman at the head, the medical school focused its planning on three closely related matters: the acquisition of new faculty, the development of a new curriculum that would eventually lead to a full 4-year program, and the de-polemicizing of the research-versus-medical-training issue. In Chapman's view there is no room for such a conflict in a modern medical school; rather, as he sees it, the medical school must devise a curriculum that is responsive to the nation's needs



Carleton B. Chapman

for practicing physicians, biomedical researchers, and medical and research administrators. In response to the suggestion that this is a big order to be filled by any single institution, Chapman agrees that indeed it is, but feels that it must be done and that Dartmouth, because of its small size, is an ideal place for responding to the nationwide dissatisfaction with the present state of medical training.

Though the ranks of the departed basic scientists have not yet been wholly refilled, Chapman's commitment to basic research as a major part of the medical school program was affirmed early last year with two acquisitions from the Harvard Medical School faculty: Mahlon B. Hoagland, associate professor of bacteriology and immunology, who became chairman of Dartmouth's department of biochemistry, and Elmer R. Pfefferkorn Jr., assistant professor of bacteriology, who came to Dartmouth as associate professor of microbiology.

Four-Year Program

With the backing of the board of trustees, which, just prior to the announcement of Chapman's appointment, approved in principle a faculty proposal for expanding the enrollment, plans are now being made to conduct a 4-year program leading to the M.D. degree. By 1971 the student body will be expanded from the present 96 to 160, and it is expected that, by 1973, candidates will be receiving their M.D.'s.

If expansion in numbers and programs were all that was involved in Dartmouth's designs, the efforts now under way there would not be particularly noteworthy. But in association with the expansion, Dartmouth is making a radical revision of its curriculum. One of Chapman's first steps was to ask the faculty to strive to cut nonessentials from classroom and laboratory courses. The working assumption was that the hours spent on such courses would be reduced by 50 percent. Faculty members acknowledge that there were many howls, but the trimming process called for each department to justify its program before members of other departments. Before the course cutting was completed, many of the faculty were ready to concede that habit, rather than rational design, accounted for the presence of a good deal of antiquated material in the curriculum. Thus, the biochemistry department concluded that it could slash its course hours by 60 percent, eliminating, for example, the 15 hours that had been devoted to physicochemical principles, and cutting the hours allotted to the study of enzymes and kinetics from 12 to 4. The rationale for these drastic cuts is spelled out in detail in a departmental paper, but basic to the reduction is the assumption that today's students are coming out of college with far better scientific training than was recognized by the current curriculum; that some of the biochemistry curriculum overlapped other courses; and finally that, by enrichment and better structuring of the subject matter retained, less will prove to be more.

As plans now stand, the first 2 academic years of the Dartmouth program will stretch over 24 months, with 6 weeks vacation per year; but the course and laboratory work will be so arranged that students will have an opportunity, and be encouraged, also to take on work at the master's level in academic departments outside the medical school, such as anthropology, sociology, and mathematics. At the end of 2 years the student can get on a track toward a Ph.D. in fundamental science, or proceed toward the M.D. For those who choose the latter, the third year will be devoted to clinical training, but in the fourth year the medical student will go straight into an internship. However, in contrast to the generally prevailing system, the internship will be under the supervision of the medical school rather than of the hospital.

Many problems, most of them involving money, remain to be solved, but

Chapman is confident that government as well as private sources are at last awakening to the plight of the nation's medical schools.

It will take years to determine whether the new program will thrive and whether its graduates will be better equipped for the careers they chose to follow. But there is no doubt that the people at Dartmouth Medical School are in high spirits about what they are doing, and that the school appears to be making a swift recovery from the serious troubles that plagued it not too long ago.—D. S. GREENBERG

Strickman and Columbia: Inventor Seeks Return of Filter Rights

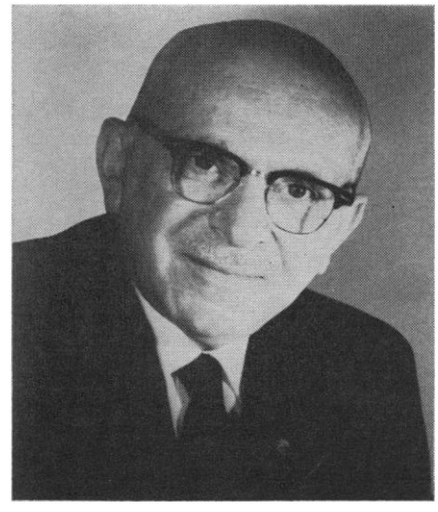
New York. The summertime marriage between Robert Strickman, the cigarette-filter inventor, and Columbia University is apparently headed for divorce, or at least the divorce court.

Strickman has asked the university to return the rights to his cigarette filter. He claims that Columbia, by not licensing the filter to interested cigarette companies, has violated the terms of the original contract transferring ownership. For the moment, Columbia has decided not to comply. Its trustees are awaiting the final results of new tests conducted on the filter, which should be ready within the next few weeks.

Relations between the inventor (and a small group of associates) and the university have deteriorated steadily since last August, when Columbia President Grayson Kirk appeared before a Senate subcommittee. Responding to pressure within the committee, Kirk promised that all negotiations with tobacco companies would be halted pending completion of a new series of tests. The waiting period dragged on, and Strickman became increasingly frustrated. As early as last September he charged, through a lawyer, that the university was in breach of contract; during the fall he sought to have the filter returned by offering to let Columbia keep its royalties if only he could be free to bargain with interested companies.

Despite these strains, the real breaking point came unexpectedly when NBC's Huntley-Brinkley news program ran a report highly critical of the filter. Purporting to have preliminary information about results of the university's new tests, NBC said: "But—on the basis of the results so far—the Strickman filter is not revolutionary. It is not much better—if any—than commercial filters now in use." After the program, Strickman and his associates asked Columbia to issue a statement saying that the tests had yet to be evaluated completely and that, until they were, NBC's report was dangerously premature; Columbia refused, and simply said "no comment." This reply further offended Strickman, who has subsequently filed a $500-million damage suit against NBC.

The university's tests, are, in fact, substantially complete. They consisted of comparisons between the Strickman filter and the standard celluloid-acetate filter with respect to effectiveness in reducing tar and nicotine at similar "pressure drop." The "pressure drop" is the key, for it measures the cigarette's ease of draw, a characteristic considered highly important by American companies. According to one unofficial report, the tests' results showed the Strickman filter to be about 10 to 15 percent more effective than celluloid-acetate at similar pressure drops. These results, say the skeptics, confirm fears that the filter is hardly "revolutionary" and not very different from those in use today. Some friends of the filter, though now conceding that the first claims for the invention, by both Columbia and the press, were inflated, nevertheless conclude that the filter is still a significant improvement.



Robert Strickman

What really divides the two schools of opinion is the importance of "draw." American cigarettes have a normal draw of 4 to 4.5 inches, as measured by a manometer, in number of inches of water. The Strickman filter, to reduce tar and nicotine 40 to 60 percent below 10 milligrams of particulate matter (a maximum set by Columbia for any cigarette with the filter), would probably require a draw of at least 7 inches for most cigarettes. American tobacco experts are inclined to dismiss a draw so high as commercial suicide. Partisans of the Strickman filter seem to have retreated slightly from earlier statements that the "draw problem" can be "solved." The filter's distinguishing characteristic, they emphasize, is its property of letting the taste come through; they say that the draw problem, at the levels contemplated, is secondary and entirely tolerable.

That two foreign companies—reportedly Rothman of Canada and Imperial of Canada—were sincerely interested in using the filter seems to indicate that Strickman's claim is not entirely hollow. The inventor says that endless tests can determine only so much, and that the foolproof way to discover whether or not the filter can succeed is to put it on the market. "If people don't like it, they won't buy it," he says.

Amidst the contention, what Columbia will do remains as unclear now as it was 4 months ago. The endless