Mt. Sinai admits to patent fraud

Following a 10-month investigation, officials of the Mt. Sinai School of Medicine revealed last week that a chemical compound to treat hemophilia for which the school holds the patent was never actually synthesized. Based on the falsified claims made by a former employee in the patent application, the New York medical school had secured considerable research funding from private industry, and as a result the case raises new questions about scientific deception (and its prevention) in an era of increasing cooperation and partnership between academic and commercial institutions.

According to a statement released by Mt. Sinai president Thomas C. Chalmers, biochemist Joseph H. Cort, an employee at the school from 1977 through 1980, admitted to reporting results about a synthetic hormone he never made. In addition, the statement indicates, test results on the side effects of other compounds were either exaggerated or completely undocumented. The results appear in the issued patent, a patent application now on file, in scientific journals, a federal grant application and a federal progress report.

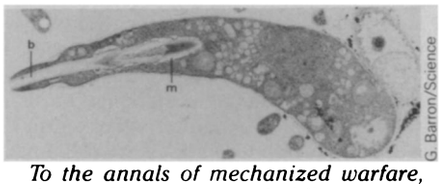
Cort's work at Mt. Sinai involved the synthesis of laboratory variations of vasopressin, a pituitary hormone that raises blood pressure and decreases urination. Because vasopressin also increases the level of a substance called F8 — the clotting agent missing from blood of hemophiliacs — there has been considerable interest in creating a form of vasopressin that does not raise blood pressure or prevent urination. Cort claimed to have created five such "analogs," and based on his claims Mt. Sinai applied for and received a patent last year; the investigation revealed that one analog was never made, another may not have been made, and three that were made did not achieve the results claimed by Cort. In an interview with SCIENCE NEWS, Cort admitted only to adding the one nonexistent analog to the patent application.

The work that led to the Mt. Sinai patent attracted the interest of Vega Biotechnologies in Tucson, which, according to company president Leon Barstow, has spent $1.8 million ($250,000 in direct funding to Mt. Sinai) to underwrite Cort's subsequent research. In return, Vega received exclusive license to develop commercial products based on the patent. In July 1981, Cort left Mt. Sinai to join Vega in the development of the vasopressin-like drugs for commercial use; soon after, Barstow says, when the company requested Cort's research data, Cort admitted to falsifying the record.

Barstow will not say whether or not the company intends to recoup its losses through litigation, but the license on the patent, he says, is worthless. He also says that, while he wishes he had examined Cort's actual laboratory notebooks early on, one reason he did not stems from the reputations of both Cort and Mt. Sinai. But, he adds, such deception could not have taken place in an industrial environment, where research data are considered company property and not the intellectual property of the investigator.

Federal officials are also interested in the Cort case, not only because a federal grant was used in part to pay Cort's salary, but also (and perhaps more important) because of the implications of validity that a U.S. patent carries with it. But the federal patent office does not have the staff to scrutinize raw data supporting patent applications, according to an agency attorney; furthermore, the agency has no legal procedure for reexamining a bogus patent. *—W. Herbert*

'Peacekeeper' fungus: Rotifers beware



To the annals of mechanized warfare, welcome Haptoglossa mirabilis, *a pint-sized parasitic fungus whose invasion arsenal includes such sophisticated equipment as high-velocity projectiles and mobile "infection units."* Haptoglossa's *weaponry and tactics were described in the Dec. 17* SCIENCE *by George Barron and E. Jane Robb of the University of Guelph, Ontario.*

According to Barron, Haptoglossa's *victims are the microscopic animals called rotifers, which share the fungus's pond- and soil-water habitats. The assault begins when a swimming rotifer brushes against one of* Haptoglossa's *cannon-like "gun cells," triggering the discharge of a missile of cellular material. (Though uncertain, Barron speculates that the missile's propulsive force is provided by a pocket of high-pressure fluid contained at the gun cell's base.) The projectile punches a hole in the rotifer's protective covering, and through this breach the gun cell extends a hypodermic-like tube that serves as a passageway for* Haptoglossa's *single-celled "infection unit." Once inside its host, this cell multiplies "until the whole of the rotifer is taken up by fungus," Barron says. Finally, the individual* Haptoglossa *cells exit the hapless rotifer, scattering to become more gun cells, and the deadly cycle begins anew.*

A cross-section of a loaded gun cell is pictured, showing the missile (m) and the bore (b).

Vitamin C for the cervix

Vitamin C intake has been implicated as a protective factor against lung, colon, skin and stomach cancers (SN: 1/5/74, p. 5; 7/15/78, p. 40; 8/23/80, p. 123). Now it seems to ward off cervical cancer as well. This finding comes from Sylvia Wassertheil-Smoller, a statistician and epidemiologist with Albert Einstein College of Medicine in New York City. She reported it at the Second Annual Bristol-Myers Symposium on Nutrition Research, held in Washington.

She and her colleagues recruited subjects for their study from women attending one of two clinics for Pap smears (a technique commonly used to detect cervical cancer in its early, curable stage). Subjects were considered "cases" if they had one positive Pap smear or two consecutive suspicious smears; they were considered "controls" if they had two negative smears. A nutritionist, unaware of the subjects' Pap smear results, had them fill out a three-day food record. The food records were processed by a computer into 71 different nutrients. Forty-nine cases and 49 controls were matched on age, race and the number of children they had borne. The two groups were then compared on their intake of 19 nutrients that the researchers had reason to think might exert protection against cervical cancer. The groups were found to differ significantly on the intake of two nutrients — betacarotene (a vitamin A precursor) and vitamin C. Cases consumed significantly less of both nutrients than did controls.

The scientists further examined the difference between the two groups in vitamin C intake. They found that only 4 percent of controls, compared with 23 percent of cases, had daily intakes of vitamin C lower than the recommended daily allowance (60 milligrams). When established risk factors for cervical cancer, such as low income, early sexual intercourse, frequent sexual intercourse and numerous sexual partners, were taken into account, there was still a significant difference between the two groups in vitamin C intake.

The investigators conjecture that women who are susceptible to cervical cancer might be able to protect themselves from the disease by taking vitamin C supplements. Although there is no hard evidence for how much vitamin C would be necessary for such protection, their study suggests 90 milligrams daily at least.

These results are "interesting," says Elizabeth Bright-See, a nutrition scientist with the Ludwig Institute for Cancer Research in Toronto who is studying vitamin C's putative role as a colon cancer preventive. However, the findings now need to be validated in a study where vitamin C intake is measured physiologically, not just with food records, she says. Wassertheil-Smoller concurs. *—J.A. Treichel*