by being separated from red blood cells. Moreover, a dose of an agent such as fibrinogen requires the pooling of fractions from hundreds of donors, so the risk of hepatitis is high, even when donors are volunteers. (Many people carry the virus around undetected.) Much plasma comes from questionable origins. Under the "short supply" clause in federal regulations, licensed fractionating manufacturers are allowed to obtain plasma from unlicensed collectors—one such firm does a thriving business with needy Haitians—and the government takes the word of the manufacturer that the plasma meets government standards.

Where does government regulation come into this tangled picture? State control of blood banking is little in evidence. Only 7 states license banks, 5 inspect them, and 21 actually have laws that protect blood banks and hospitals from any liability in the event that a patient is transfused with tainted blood. By defining blood as a service rather than a product, laws exempt blood from implied warranty.

On the federal level, the only regulation comes from the Division of Biologics Standards (DBS), which, in 1946, was charged with licensing and inspecting of all blood banks engaged in interstate transactions. While this covers 85 percent of the blood drawn annually in the country, observers tend to agree that DBS lacks both the manpower and the motivation to exercise its mandate effectively. Federal control is further dissipated by the fact that it is in the hands of three different agencies: The DBS is responsible, under its vaccine and serum standards, for ensuring the "safety, purity, and potency" of blood and blood products; the Food and Drug Administration oversees the quality of blood containers and other equipment; and the Center for Disease Control is responsible for the standards followed by laboratories in testing and processing interstate blood. The cautiousness (some say overcautiousness) of the DBS may be exemplified in a remark by assistant director Sam Gibson: "We have the obligation not to make regulations so strict that the blood supply dries up." As a result, even the cautious National Academy of Sciences has said that "regulatory activity with respect to blood and blood products has followed far behind the scientific discourse in the field, and the application of new knowledge in behalf of the broader public welfare has been considerably impeded."*

With all the competition, overlapping, inconsistency, inefficiency, and waste inherent in this blood collecting system,

* *An Evaluation of the Utilization of Human Blood Resources in the United States*, a booklet prepared in October 1970 by the National Academy of Sciences Committee on Component Therapy.

Briefing

Metric A Go-Go

Today, the United States remains the only industrialized nation in the world with no policy to convert to the metric system; we are holding out with the foot, the inch, and the yard, which is fabled to have been the distance between the English King Edgar's outstretched hand and his nose. Wiser heads in the Senate, however, are concerned about this and on 29 February and 1 March the Commerce Committee held hearings on various proposals that would remedy this situation.

All three proposals would do approximately the same thing: They would set up a mechanism to draw up on short order a 10-year plan for changeover by government, industry, and educational institutions. The major proposal is a bill, S2487, introduced by Senator Claiborne Pell (D–R.I.) which would direct the Secretary of Commerce to formulate a plan in 18 months for the changeover. A second section would provide financial assistance for the changeover in the form of inducements and loans. A second proposal would have the plan drawn up by a nine-member board which represents all sectors of the economy, and offers no financial assistance in the conversion. This is the bill of Representative Robert McClory (R.–Ill.) and is labeled HR-12555. The third measure—if that term may be used—is the Administration's recommendation, sent to the House of Representatives 3 weeks ago, which would have a 21-member board draw up a plan within a year. All proposals would make the metric system the major—but not exclusive—form of measurement in the United States.

Ever since the days of Thomas Jefferson, Congress has been presented with requests for a new national system of measurement—but its response can only be described as somnambulant. Indeed, consideration of such proposals has become a 200-year-long ritual that generally draws from the congressmen only polite yawns and nods of the head.

The chances that any of the current bills will pass Congress this session are hardly better than before. However, the cause of "go metric" has recently gained some fairly prominent champions in the House and Senate and in the Administration, such as former Secretary of Commerce Maurice Stans, who believed that metric conversion would improve U.S. trade posture. Some estimate that if converted to the metric system the balance of trade could be improved in our favor by as much as $600 million.

Another champion of the metric system, Lewis M. Branscomb, director of the National Bureau of Standards, noted in a recent speech that the United States exported in 1969 as much as $14 billion worth of "measurement-sensitive products, such as vacuum pumps, typewriters, and computers. "A slight drop in our exports of measurement sensitive products could mean the difference between a favorable and an unfavorable U.S. trade balance," he said.

Evidently, he and others feel that it is high time we started seeing farther in the measurement field than King Edgar's nose and, for that matter, our own.—D.S.

The Brawling Bent

Charles Darwin and Captain FitzRoy had some fierce disputes during the 5-year voyage of the *Beagle*, but at least they managed to avoid throttling each other. In the case of a modern-day *Beagle* run by the U.S. Navy, officers and researchers have had a less fortunate experience.

The ship in question is the USNS *Silas Bent*, an oceanographic research vessel currently operating in the central Pacific. A Navy Department spokesman

it becomes clear that the hepatitis problem—which many experts say can only really be solved by developing foolproof screening tests for donors—is only the tip of the iceberg.

What is needed, say most responsible blood bankers, are two things: uniform standards, inspection, and accounting procedures; and transition to an all-volunteer system.

The rationale for the latter has been summed up by English sociologist Richard Titmuss in a recent book, *The Gift Relationship* (now being published by Pantheon Books), which uses blood practices as an indicator of the role of altruism in modern society. "If blood is considered in theory, in law, and is treated in practice as a trading commodity then ultimately human hearts, kidneys, eyes, and other organs of the body may also come to be treated as commodities to be bought and sold in the marketplace."

Many people agree with Titmuss that any equation of blood with money should be eliminated—that no cost should be attached to the substance itself either between donor and collector or between distributor and user.

This view appears to be gaining some momentum, but one of the major obstacles is medical insurance. Insurance policies began reimbursing patients for the costs of blood itself, as well as of processing and transfusion, in the late 1940's, a practice which greatly stimulated the growth of commercialism because it removed incentive to replace blood with blood. Later, Medicare and Medicaid weighed in with the same practice.

One of the most startling results of the present uncoordinated system has been the inconsistency in costs. The Red Cross, which charges only processing fees, charges hospitals anywhere from $8 (in Washington, D.C.) to $20 (in San Jose, California) a pint. The cost of a unit of cryoprecipitate can vary from $2.50 to $17.50, depending on where and by whom it is produced. The cost of a unit of blood to a hospital patient can range from $10.50 (in Seattle, where all blood needs are filled by the King County Central Blood Bank) to over $100—which can cover the costs of processing, repeated cross-matching, replacement, and transfusion. The reason for these discrepancies have little to do with whether blood is bought from the donor. In fact, say most blood banking experts, it is actually cheaper to buy blood than to recruit a volunteer. Indeed, one reason commercial banks stay alive in the competitive world of blood banking is that they can often supply blood, in the type and quality required, when and where it's required, at a lower cost than that charged by banks which put heavy reliance on volunteers.

Blood bankers have so far shown an

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confirmed that investigators are still looking into the causes of friction between the *Bent*'s crew and scientists and technicians that culminated in a wild barroom brawl on Midway Island earlier this month.

According to one version of the story filtering back from Midway, the conflict reached the kindling point when the *Bent*'s civilian skipper, a former naval officer, took it upon himself to sail his ship approximately where he pleased and thereby strayed more than 100 miles from where the *Bent*'s researchers were supposed to be mapping bottom contours. Whatever the cause though, the friction led to what the Navy described as "an exchange of blows" between civilian crew members on the one side and civilian scientists and technicians on the other, at the Midway Island officers' club on 6 March. One source said about ten combatants were involved.

Nobody was arrested and no charges were preferred, but a few fiery souls were apparently held for awhile in preventive detention until tempers cooled. The Navy said no one was injured, but rumor has it that one scientist or technician sustained a large gash on his forehead.

In a terse response to inquiries, the Navy spokesman said differences aboard the ship had been resolved and that the ship had sailed "on schedule, with no rotation of crew or scientists and technicians." *Silas Bent* may be a tighter ship, but chances are it is not a happy ship.—R.G.

Edwards Bites Watchdog

The three coequal branches of government instituted by the founding fathers may not always live in harmony with each other but neither do they customarily pursue their differences to the point of litigation. Yet that is what the Food and Drug Administration (FDA) believes is being done to it by Congress's chief watchdog over FDA activities, the House subcommittee on intergovernmental relations chaired by Representative L. H. Fountain (D–N.C.).

In a letter to Fountain last month FDA commissioner Charles E. Edwards grumbled that the subcommittee had furnished the news media with certain internal FDA memoranda relating to the livestock feed chemical diethylstilbestrol (DES). By demanding FDA memos and making them public, Edwards complained, "the subcommittee staff is in effect participating in litigation against the FDA, disrupting the FDA decision-making process, violating the intent of the Freedom of Information Act, and undermining the effectiveness of the agency."

The litigation referred to by Edwards is a suit entered by the Environmental Defense Fund requiring the FDA to ban DES. In a letter of 10 March replying to Edwards' recriminations, Fountain remarked that the memoranda in question were part of the record of a subcommittee inquiry that was under way before the suit was brought against the FDA. The inquiry, Fountain told Edwards, "cannot be curtailed because you believe FDA may be embarrassed or adversely affected in the conduct of its defense in the pending suit."

The FDA memoranda at issue are authored by scientists in the Bureau of Drugs and Bureau of Veterinary Medicine and take positions at variance with several official FDA statements on DES.

"I am disappointed that you have seen fit to oppose making public the differences of competent scientific opinion within FDA on this important matter," Fountain rebuked the Commissioner. "It would seem to me that in the interest of justice, as well as the public's protection, you have an obligation to reveal all of the relevant scientific evidence in the FDA's possession, not just those selective documents which you regard as supportive of your position."—N.W.