



Scott checks the intravenous solutions to make sure they are not contaminated.



Kundsins: Monitoring with a purpose.

areas of the hospital. Hollis S. Bodman collects and cultures microbes from the operating room, Moniek Spaepen from inhalation-therapy equipment, Judith Scott from intravenous solutions and Robert Perkins from other critical areas. The staff also takes regular cultures from patients at special risk of infection, such as burn patients, and from the environment of special-risk patients. For instance, they sampled not only the food but the sherry to be consumed by one immunosuppressed patient.

Using their sampling skills to identify pathogens, the staff then puts the information obtained to practical use. Their sampling of microorganisms has led to rigid and detailed recommendations for hospital housecleaning—how to clean the operating room floor and how often, the need to wash staff and patient gowns in germicides, not just in soap, the need to change the water in the humidifiers for inhalation therapy every 24 hours to maintain sterility. The staff then follows up with more monitoring, to make sure that the recommendations are being implemented. They devised a technique for recovering the kinds and numbers of microbes from intravenous solutions. They now use the technique to check exact duplicates of the solutions patients are to receive. They have found that when intravenous solutions are contaminated, the fungi and bacteria in the solutions usually come from the air in the rooms

where the solutions were prepared. This discovery led to better cleaning of these rooms. They have been instrumental in getting ultraviolet lamps installed in the operating rooms because they found that the lamps reduce the danger of pathogens getting into patients' wounds during surgery.

Lutheran General Hospital in Park Ridge, Ill., is a community (nonteaching) hospital that routinely monitors critical areas of the hospital and puts the data to use. Microbiologist James G. Shaffer reports that he and his staff at Lutheran have traced pathogens before they caused infections. For instance, they found *Staphylococcus* in the nursery. This bacterium is especially dangerous to patients with post-operative wounds. The bacterium, Shaffer declares, probably wouldn't have been observed if they hadn't done routine sampling. Shaffer and his co-workers have also found a strong correlation between the amounts of microorganisms in the hospital and the quality of housekeeping. When the count gets high, they get after the housekeeping staff to do a better job. "These people," says Shaffer, "are more likely to be impressed by a [microbial] colony than by a comment."

The Baltimore Cancer Research Center also believes in vigorously tracking down hospital microbes and using the information obtained to prevent infections. "My philosophy," says the center's chief microbiologist, Viola Mae

Young, "is that one has to very carefully study the environment of any situation they find themselves in. In other words, we have just moved to the University of Maryland. Here I will do intense surveillance culturing until I know the cleaning is up to standard. I will discover what the problem areas are and take care of them. Once I have that fully in hand, I will do more spot checking, not quite as much as on a routine basis." Because the center's patients are extremely susceptible to infections, Young and her staff also culture bacteria regularly from various recesses of the patients' bodies. This way a pathogen can be spotted immediately, the patient treated and isolated from other patients.

Might more hospitals be turning "microbe hunters" loose to effectively prevent hospital infections? "The current trend is away from this," Young says. "It is not very encouraging."

"I don't see any trend toward quality-control checking of critical areas," McGarrity agrees. "I would like to. Some sampling can give you a good handle on what is happening as far as infection control is concerned."

"No, there is no upsurge of interest," Kundsins concurs. "Actually the CDC has been downgrading it, saying one has to look for an epidemic. My claim is that we have an epidemic. Anything that is not normal is an epidemic. Picking up infections in the hospital, that's not normal. It shouldn't be." □

Off the Beat

Geller performs for physicists

Some physicists among our readers have criticized us for paying attention to the strange feats of Uri Geller, the young Israeli who can bend keys without touching them (SN: 11/10/73, p. 300). Other physicists, however, are interested and somewhat perplexed as the following report delivered to us by the theoretical physicist Jack Sarfatt indicates.

We present Sarfatt's report in *Off The Beat* rather than in our regular news columns because we are somewhat dubious about its being science news: No one has yet published a testable hypothesis about what is going on.

Before presenting the report we would like to enter the caveat that physicists should be the last people on earth to reject psychokinesis out of hand since they have a name for it, Pauli effect, that refers to one of their most distinguished and colorful colleagues, the late Wolfgang Pauli.

Pauli, who was mercifully a theoretical physicist, was notorious for being able to foul up any experiment in sight by his mere presence in the laboratory. The most outrageous Pauli story we have come across—and we remember reading this in the memoirs of a reputable physicist, but we can't remember whose memoirs—concerns James Franck, who at the time was doing vacuum-physics experiments at the University of Göttingen.

Vacuum experiments in those days were done with complex arrays of glass tubing. One day at about noon, Franck's experiment suddenly blew up or—as the modern jargon would have it—imploded. Franck checked everything out and could not understand why. Some days later he got a letter from a friend in Copenhagen that told him by the way that Pauli had arrived in Copenhagen on the day of the accident. Franck checked out the circumstances of Pauli's trip and discovered that at the exact moment of the disaster Pauli's train was standing in the Göttingen station. Case closed.

The above story may have to be qualified as possibly apocryphal since we do not have sworn affidavits attesting to it. Sarfatt's report on the latest Geller-Prüfung refers to a veritable cloud of witnesses. Here it is:

Uri Geller was tested on June 21, 1974 by John Hasted (professor of experimental physics, Birkbeck College, London) and David Bohm (professor of theoretical physics, Birkbeck

College). Participants and witnesses to the test include the physicists Keith Birkinshaw and Ted Basin and myself. Also present were the writer Arthur Koestler and the psychic researcher Brendan O'Regan. Several experiments were conducted.

In one of them, Geller placed Sarfatt's hand on top of several metallic objects which included a flat circular disk allegedly cut from a single crystal. A piece of plastic separated the palm of Sarfatt's hand from the disk. Geller's hand was in contact with Sarfatt's for approximately two minutes. Upon examination, the circular disk was found to be significantly bent. Detailed studies of the disk are being conducted at the Birkbeck Laboratories. A precise monitoring of the location of the disk during Geller's psychokinetic action could not be made. However, it was absolutely impossible for the disk to have been tampered with by means of tricks while it was under Sarfatt's hand.

Geller also succeeded in triggering a very strong burst from a Geiger counter tube that he held in his hand. The creation of the burst happened almost simultaneously with Geller's expressed intention to create it. The magnitude of the burst was conservatively estimated by Hasted to be in the region of 100 to 150 counts per second which should be compared to a normal background rate of about one per second. Hasted is now carefully studying automatic recordings of this event and several others similar to it. The creation of the burst was correlated with strong breathing and signs of great physical exertion on Geller's part. Geller complained of a sensation similar to an electric shock. There was no possibility of any electric shock coming from the instrumentation.

Geller then succeeded in bending several pieces of metal by psycho-energetic action. These objects included the blade of a knife and a key belonging to Bohm. The flow of water from a tap on to the metal seemed to make the bending occur more easily. The bending times were of the order of several tens of seconds.

Another test of Geller was made on June 22, 1974, at Birkbeck. Geller was able to repeat his performance of the day before with the Geiger counter tube. Witnesses to this test included the American concert pianist, Byron Janis and the artist Maria Cooper Janis. On this occasion, Koestler reported a strong sensation simultaneous with the Geiger tube burst. Koestler was visibly shaken for several minutes. Geller also succeeded in bending the house key of the science fiction writer, Arthur C. Clarke while being continuously watched by Clarke, Koestler, A. V. Cleaver (former director of the Rockets Division, Rolls Royce Ltd.)

and Arthur Ellison (department of electrical engineering, City University of London). Clarke, who was previously skeptical of Geller's authenticity has publicly challenged any magician to "put up or shut up" in regard to duplicating Geller's feat under identical conditions.

Geller also succeeded in duplicating a drawing made by Koestler. Full details on the Birkbeck tests are being prepared for publication by Hasted and Bohm. Independent tests were made by John Taylor (department of mathematics, King's College, London) with Geller during the last week in June. My personal professional judgment as a Ph.D. physicist is that Geller demonstrated genuine psycho-energetic ability at Birkbeck, which is beyond the doubt of any reasonable man, under relatively well controlled and repeatable experimental conditions. While the experimental conditions were not perfect, the events at Birkbeck do represent a major step forward in the new field of experimental psycho-energetics.

—Jack Sarfatt

On the statistics of scientific meetings

In the court of Nero, tradition tells us, there was an official called *arbiter elegantiarum*. The holder of this office was one Petronius, traditionally identified with the author of that polymorphous perverse romp, *Satyricon*, which Federico Fellini recently made into a revoltingly fascinating film. The function of the said Petronius at court was to be a kind of Emily Post at the orgy, determining who reclined where and who took precedence over whom in the games and sports that were indulged in.

I propose that what the scientific world now needs is a kind of *arbiter scientiarum*, an officer whose function it would be to review the precedences of scientific meetings and avoid conflicts. Perhaps the International Council of Scientific Unions would be a proper body to set up such an office.

The thought comes up because of a recent week, that of June 10, during which I could have attended three separate meetings for enlightenment and profit. To review them, they were: a conference on experimental general relativity in Cambridge, Mass., a meeting on submillimeter radio astronomy in Bishop, Calif., and a meeting on quantum electronics in San Francisco.

The choice finally went to the quantum electronics meeting. Cambridge was early out because it was clear for other reasons that I would have to be in California at the time. It would be disingenuous to pretend that the venue of the quantum electronics meeting in my favorite city of all North America,