

Hundreds of Shriners were in town for an annual high school all-star **football** game and pre-game **parade**. What started out as a festive day, filled with **miniature** motorbikes and **capering clowns**, turned chilling as the Mary Hitchcock **Emergency Room** began to fill up with **sick** Shriners.

By Roger P. Smith, Ph.D.,
and Nicholas Jacobs, Ph.D.

LARRY McDONALD / THE VALLEY NEWS

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Sporting fezzes and revving their mini motorbikes to thrill the crowd, these Shriners were among the hundreds who took part

The Sick

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Saturday, **August** 27, 1966, in Hanover, N.H., was one of those hot and humid dog days that had everyone seeking shade. But even though the temperature was in the 80s, many inpatients at Mary Hitchcock Memorial Hospital were delighted at the prospect of being transported out to the sidewalk along Maynard Street.

It was the day of the Shrine parade, the prelude to the annual Maple Sugar Bowl football game between New Hampshire and Vermont high-school all-stars. It was the custom to grant patients who couldn't see the parade from their rooms, and who could be safely moved, the privilege of leaving the hospital.

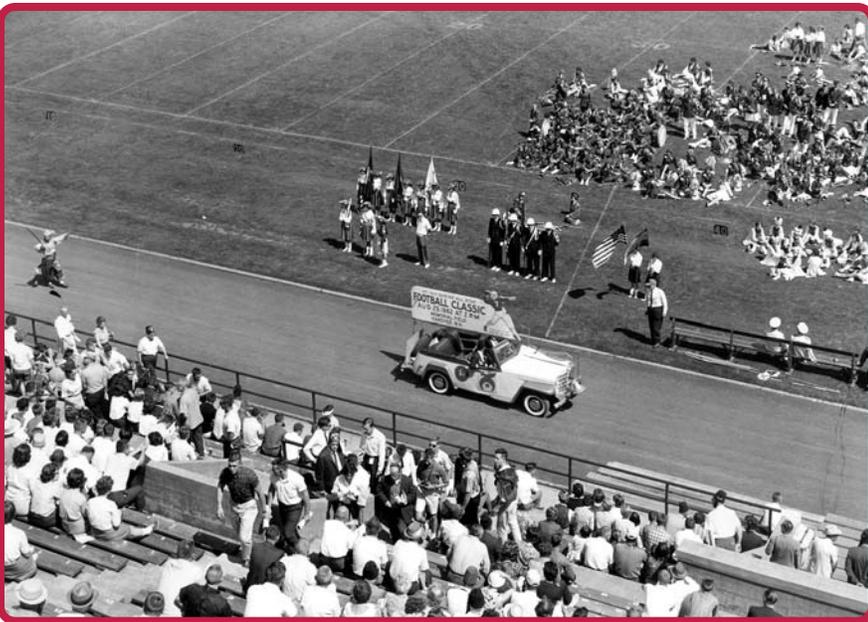
By **parade** time at noon, the Maynard Street sidewalk was crowded with gurneys, wheelchairs, and IV poles—and patients excited about a little relief from the tedium of a hot weekend in the hospital. It took as much as an hour for the parade to pass by—bands, majorettes, clowns, and hundreds of Shriners from all over the Northeast: Shriners on unicycles, in elaborate costumes, waving from banner-festooned convertibles, and revving miniature motorbikes.

The purpose of the **festive** event was serious, however. The Shriners were raising money for their network of children's hospitals (see the box on page 49). So they always put on a special show as they passed by MHMH—sometimes pretending to drive

in the 1971 pre-game parade in Hanover. Five years earlier, many Shriners took ill—very ill—as the parade wound up.

Shriners

The authors are both longtime members of the DMS faculty. Smith is the Irene Heinz Given Professor of Pharmacology and Toxicology Emeritus and a regular contributor to DARTMOUTH MEDICINE. Jacobs is a professor emeritus of microbiology and immunology. The August 29, 1966, issue of the local daily, the Valley News, carried extensive coverage of the stricken Shriners; some of the facts in this article were drawn from that account.



This photograph of the Shrine parade—circling the Dartmouth football stadium just before the kickoff of that year’s all-star game—dates from 1962, just four years before the events in this account.

“You’ve got to come in and **help me**,” Dr. Harry Bird recalls a colleague saying. “We have an **emergency room** and a lobby full of sick Shriners. They are trying to be **gentlemanly**, not make a mess, and some are vomiting into their **fezzes** as they come through the door.”

a vehicle right onto the sidewalk, only to veer off at the last minute. One patient was clearly not amused by these antics, however, and demanded to be taken back inside. It was later learned that he was in the hospital because of injuries sustained when he was struck by a motorcycle.

Otherwise, the **parade** went off without incident, and after all the patients had been returned to their rooms, the hospital staff settled in for what they hoped would be an uneventful weekend.

The parade continued right into Dartmouth’s football stadium and around Memorial Field’s cinder track, where the various Shrine units passed in review before a stand of dignitaries and a near-capacity crowd of 13,000. High above the field in the press box, under the watchful eye of David Orr—a 1957 Dartmouth graduate who would later become senior associate director of alumni relations for the College—the sportswriters were focused on the upcoming 2:00 p.m. kickoff. But, Orr recalls, “there was an obvious problem with one of the [parade] units. The marching was ragged, and several Shriners even keeled over. We thought it might be the combination of heat, excitement, exertion, or, more seriously, heart attacks or heat stroke. But the game went on as scheduled.”

As the action progressed on the field, however, there was a good bit of action in the stands, too. Emergency personnel from the two ambulances posted at the stadium could be seen periodically picking their way through the crowd and trying to assist or carry out spectators in obvious distress.

Another person with vivid memories of that day was that year’s general chairman of the game, Shriner Frank Maynard, who still lives in West Lebanon, N.H. He was told by fellow Shriners that a number of men from the Springfield, Mass., unit were quite sick. He turned on his portable microphone, which activated the stadium’s loudspeaker system, and announced that anyone who was ill should come down to the sidelines, where they’d be picked up and transported to the hospital.

At around 3:30 or 4:00 that **afternoon**, Dr. Harry Bird, a staff anesthesiologist at the Hitchcock Clinic and the “second on-call” for that weekend, answered the telephone at his home. It was his colleague Dr. Brian Burke, now deceased, who was the first anesthesiologist on call. “This is not a joke,” Bird recalls Burke telling him. “You’ve got to come in and help me.”

When Bird asked what was going on, Burke replied, “We have an emergency room and a lobby full of sick Shriners. They are trying to be gentlemanly, not make a mess, and some are vomiting into their fezzes as they come through the door because no other receptacles are available. The majority are adult males well over the age of 50. I’m really concerned that a few are going to become seriously dehydrated and go into shock. It appears to be some kind of food poisoning. There are so many of them that some have been diverted to the VA [the Dartmouth-affiliated veterans hospital in nearby White River Junction, Vt.] or to Alice Peck Day [a community hospital in Lebanon, N.H.]”

It turned out that the decision to divert some of the patients had been made by ambulance drivers or friends of the stricken Shriners who were bringing them in using the same vehicles that had been in the parade. It had seemed to the drivers that things were backing up at the MHMH emergency room and main entrance.

So Bird went in to the **hospital**. The emergency room in those days was a little rabbit warren of rooms and cubicles right off the main lobby, just behind the telephone switchboard. When Bird arrived and peered in, things didn’t look too bad. There was only one person in each cubicle. He said, “It looks like you have everything under control.” But the nurse on call said, “No, no. Go upstairs to the lounge outside of the recovery room. There’s a bunch of them up there. We had to clear the lobby so as not to alarm visitors or other patients coming in with unrelated complaints.”

When Bird got up to the second floor, he found Burke, the late Dr. John Milne and Dr. Donald MacKay (both internists), and other staff tending to

Shriners spread all over. They were sprawled on sofas and chairs and leaning against the walls by the elevators. “What we were really faced with,” says Bird, “was a group of people with violent, projectile vomiting—and at least some had diarrhea—both of an acute onset. None of them had high fevers, which was reassuring. At least we were not dealing with an infectious process, which would have been really alarming.” Still, things were alarming enough. Bird recalls a line of gurneys up and down the hallway, with vomiting Shriners and bedpans, bedpans, and more bedpans.

“Although we had no idea at the time whether or not it was serious,” Bird continues, “the quick onset suggested most patients might have a rapid course and recover quickly. What to do was clear—start IVs on the more seriously dehydrated patients and monitor their vital signs.”

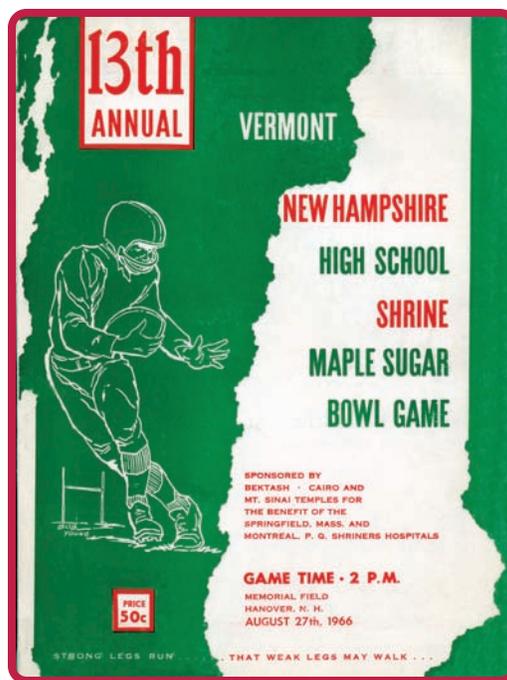
The anesthesiologists had been called in because back then the technique for inserting intravenous (IV) lines was still pretty old-fashioned. Today’s plastic catheters, plastic disposable needles, and fancy connectors were just beginning to come into use but were not yet available at MHMH. The task was complicated by the fact that most of these patients were elderly and already dehydrated, so their veins had collapsed. Although the nurses and interns were doing the best they could, the anesthesiologists of that era had the most experience starting IVs in challenging situations.

Everyone was working **furiously**. At one point, Dr. Milne, who had a reputation for being gruff, was heard to mutter under his breath—as a patient who was only mildly affected, if at all, pleaded for some medication—“No puke, no pill.”

Patients were still being assisted out of the stadium as the game was drawing to a close, but it was clear that the worst was over. Those who had been seen first were already showing signs of recovery, and the prediction that the illness would have an abrupt course proved correct.

It was difficult to keep track of the numbers because a few patients may have been treated and left the hospital before they were identified. The total number of affected individuals was placed at 91—with 69 of them seen at Hitchcock, 18 at Alice Peck Day Hospital, and four at the VA Hospital in White River Junction, Vt. All but three were released the same day, and those three—all of them at MHMH—were kept only overnight.

In addition to the Shriners, Mary Hitchcock handled 20 other “regular” emergencies the same day. The emergency room staff was stretched thin and the housekeeping staff faced a horrendous cleanup problem, of course, but Hitchcock could



COURTESY SHRINE MAPLE SUGAR BOWL

The program for the 1966 Shrine game reveals that it was the 13th year for the event—an unlucky coincidence.

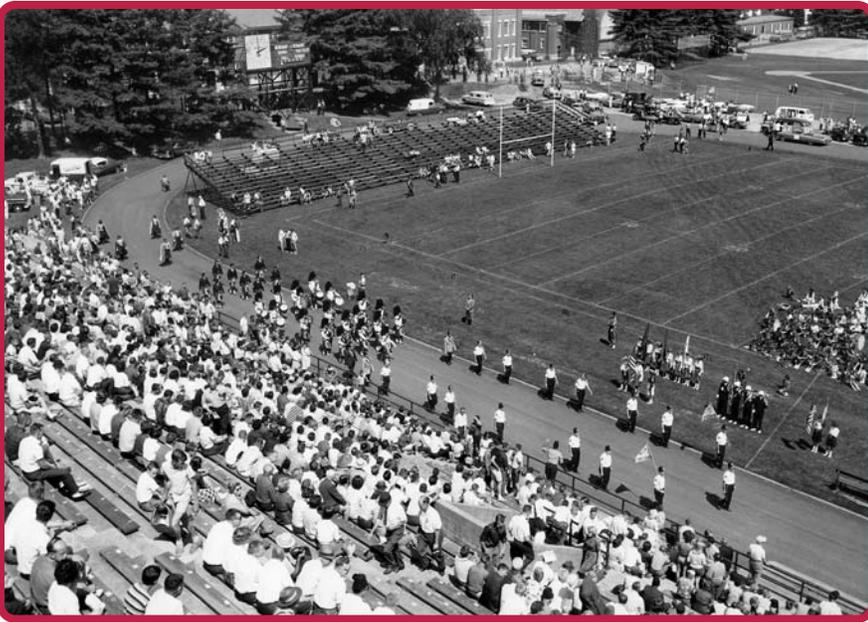


COURTESY SHRINE MAPLE SUGAR BOWL

These clowns took part in the 1966 parade, the same year that almost a hundred Shriners took very ill at the game.

actually have accommodated many more patients overnight. The Hospital had over 100 more beds back then than it does today, and the patient census was always lowest on the weekends because whenever possible, staff made an effort to process discharges on Fridays.

There were several felicitous **footnotes** to the incident, however. One is that it made Bird and the late Dr. Elizabeth French, a pathologist, aware of the need for better training in IV insertion. They put together teams to make sure that medical students and interns got practice in quickly starting IV lines. And the experience gained by hospital staff in caring for the inundation of Shriners was of great value in a subsequent, much more serious dis-



This photo shows a carefree crowd assembling for the 1962 Shrine game. But as fans gathered for the 1966 game, they saw action in the stands as well as on the field, as Shriner after Shriner took ill.

The communal meal strongly pointed to food poisoning as the cause of the sickness, but what type? Food-borne diseases are a major public health problem, with an estimated 76 million cases annually in the United States.

aster. Just two years later, a Northeast Airlines passenger plane, attempting to land at Lebanon Airport in bad weather, crashed in a remote area on Moose Mountain. There were 32 fatalities and 10 survivors who required urgent treatment.

But lessons learned for the future were all well and good. Learning what had sickened the Shriners was a more immediate concern. It quickly became apparent that those affected were all part of a five-bus caravan that had carried more than 200 Shriners, family members, and guests up from the Shrine's Melha Temple in Springfield, Mass. The group had stopped at 10:00 a.m. to eat box lunches at a picnic area near Wilder Dam on the Connecticut River, just south of Hanover.

The communal meal strongly pointed to food poisoning as the cause of the sickness, but what type? Food-borne diseases are a major public health problem, with an estimated 76 million cases annually in the U.S. Chemical adulteration of the food could not be ruled out, but it seemed unlikely since no one had noticed a peculiar odor or taste. So suspicion fell on bacterial contamination.

There are a number of different types of bacterial contamination, including the very dangerous *Clostridium botulinum*, which could be ruled out immediately on the basis of symptoms and circumstances. Botulism occurs most commonly when improperly sterilized food is sealed in the anaerobic environment of a can or jar.

Some other common bacterial causes of food poisoning are various species of salmonella, patho-

genic varieties of *Escherichia coli*, and *Staphylococcus aureus*. Fresh poultry and eggs are a frequent source of salmonella. The organism is found in the intestines of poultry and can contaminate meat at the time of slaughter. Pathogenic *E. coli* is occasionally carried in the intestines of cattle, and undercooked hamburger is often involved in outbreaks of *E. coli*-related illness.

When food affected by either salmonella or *E. coli* is unrefrigerated and/or undercooked and then ingested, living bacteria of either type can multiply in the human intestines. Fever is often present, since such illnesses are actually an infection rather than a true poisoning. The symptoms are mainly abdominal cramps and diarrhea, and they generally occur from 16 to 72 hours after ingestion of the contaminated food. Such infections can be quite serious and prolonged, but the majority of those stricken recover completely.

But in the Shriner outbreak, the patients' signs and symptoms were typical of food poisoning from *Staphylococcus aureus*—one of the most common causes of food-borne disease. The prominence of nausea and vomiting; the presence of diarrhea in some cases but the absence of fever; the short incubation period, of between two and six hours after the suspect food had been eaten; and the short duration to the illness—usually less than 12 hours: all these factors were typical of *S. aureus* toxin. Its constellation of symptoms can also include general malaise and, in 10% of cases, abdominal pain distressing enough to justify hospitalization.

However, the prognosis for affected individuals is excellent unless fluid loss and dehydration are extremely severe—as sometimes can be the case in the very young and the elderly. *Staphylococcus aureus* can also cause other, more serious infections, such as abscesses, blood poisoning, and toxic shock syndrome. The laboratories of Drs. Ambrose Cheung, Jeffrey Parsonnet, and George O'Toole in the Dartmouth Medical School Departments of Microbiology and of Medicine are currently investigating factors involved in the pathogenesis of staphylococcal infections.

The symptoms of staphylococcal food poisoning are caused by a toxin secreted by the bacteria during their rapid growth in an appropriate medium. If they grow on food that is subsequently eaten, the toxin is absorbed from the gastrointestinal tract and produces vomiting and diarrhea by interacting with the organs of the abdomen. The mechanism by which these stimuli are transmitted to the vomiting center in the brain was elucidated many years ago by the late Dr. Herbert Borison, a

longtime professor of pharmacology at Dartmouth.

The original source of the organism is almost always the individual who prepared the food. *Staphylococcus aureus* is present in low numbers on the skin, especially in the nasal cavity, in a significant number of healthy individuals. Higher numbers of organisms can be found in minor staphylococcal skin infections, such as boils or abscesses.

Once introduced into food, the organism needs only a few hours at warm temperatures to multiply and generate sufficient toxin to cause illness. This is why health officials recommend that no unpreserved food be left unrefrigerated for over two hours. (Interestingly, although there is much wider recognition of the importance of refrigeration now than in 1966, this trend has been more than offset by increased consumption of meals prepared in large volume outside the home—so food-borne staphylococcal outbreaks have *increased* in recent years.) Almost any food prepared without large amounts of preservatives will support staphylococcal growth, and the organism is particularly fond of high-protein fare, such as cream-filled pastries or ham, chicken, potato, and egg salads.

Those who remember the Shrine **incident** recall that some sort of laboratory investigation was conducted. Raymond Book, a retired lab supervisor, is quite sure that the late Dr. Philip Nice, a pathologist and director of the clinical microbiology lab, obtained one of the leftover sandwiches and succeeded in growing *S. aureus* from it. But no written record of such a study could be found.

And even human memory of the incident does not extend to whether further studies were done to determine if this isolate was able to produce the offending toxin. Some strains of staph do not make this toxin and so are merely harmless contaminants when they are found in food.

Yet such **studies** would have been almost superfluous. The final circumstantial link in the chain of evidence was that the group's box lunches—containing ham or chicken salad sandwiches, and perhaps potato salad as well—had been prepared by a caterer in western Massachusetts. Some reports indicate that the lunches were transported north in an open convertible, while others say that they were in the back of one of the buses. In either case, they would not have been refrigerated. And in that pre-interstate era, the trip from Springfield would have taken three or four hours—about the same length of time as it then took the toxin to fell the affected Shriners.

But, happily, the course of the illness for most of them was also no longer than that. ■



NANCY WASSERMAN / DARTMOUTH COLLEGE LIBRARY

This Shrine band participated in the 1982 parade—but the event's flavor was similar decades before . . . and since.

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The story behind this story

For over 80 years, 22 **Shriners** Hospitals for Children—located throughout the United States, Canada, and Mexico—have provided care for children with orthopaedic problems, severe burns, or spinal cord injuries at no charge to patients, parents, or third-party payors. In 2005, nearly 125,000 children were served.

Since it was first played in 1954, the Shrine Maple Sugar Bowl Game has raised more than \$5 million for that effort.

The first **Maple** Sugar Bowl was held in Nashua, N.H. From 1955 to 1957, the game was played in Manchester, N.H., and the event moved to Hanover in 1958. It has been played there ever since, except in 1967 and 1968, during the expansion of Dartmouth College's Memorial Field, when it was played in Burlington, Vt., one year and in Durham, N.H., the next.

Because renovations are being made to Memorial Field again this year, the 2006 Shrine parade and game will be held at Plymouth State University in Plymouth, N.H.—but they'll return to Hanover in 2007.