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in the cause of advanced technology, Low says it was necessary "to get equipped first with buildings and people." Graduate education is being strengthened. RPI borrowed to build a new computer center in a converted chapel on land purchased from the Catholic Church. And major funds were channeled into creation of a computer graphics center that has proved a magnet to industry interest.

As for the research park, the hope is that it will attract research-intensive companies complementary to RPI's research capabilities in computer graphics and other high-technology areas.

—JOHN WALSH

The Hmong: Dying of Culture Shock?

Misfortune fell upon the Hmong, a large tribe of mountain people in Laos, several years after they became allies of the United States in the war against the North Vietnamese and the Pathet Lao. They were reputed to be tough warriors, loyal friends, and helpful collaborators in hiding

Joel M. Halpern

Hmong tribesmen in Laos

downed U.S. airmen. When the United States withdrew from Indochina, the Hmong became the victims of a brutal revenge campaign by the victors. Survivors report that the North Vietnamese and Pathet Lao used toxic chemicals against them, including possibly a nerve gas manufactured by the Soviets. The same gas is thought to have been used against mountain people in Afghanistan as well (*Science*, 30 May 1980, p. 1016).

Many of the Hmong escaped to refugee camps in Thailand, and from there they have been emigrating slowly to the United States. According to one estimate, there may be 35,000 in the country today, living mainly in large cities. Here the Hmong have become the victims of another scourge, a strange malady that kills healthy young men in their sleep and leaves no physical traces.

The problem was first noticed by an assistant medical examiner in Minneapolis, a city with the largest concentration of Hmong in the country. Two mysterious deaths occurred there last summer. Then another occurred in Portland, Oregon, in January. Alerted that something odd was happening, officials at the federal Center for Disease Control (CDC) in Atlanta called a conference in late February and began a national investigation. One of the coordinators, Andrew Vernon, says that the entry of CDC was irregular since the agency normally must be invited in by a state before it may launch an investigation. But the usual standards did not seem to apply because the epidemic was not localized, and no single health department could coordinate research involving Hmong in 20 states.

Vernon reports that the CDC has come up with only sketchy information so far. Investigators are collecting specimens from postmortems on 20 Hmong and six non-Hmong Indochinese who have died mysteriously since 1977. About 15 have died since January 1980, Vernon says; the rising number of deaths roughly matches the rise in the Hmong population here. Nineteen of the Hmong victims were male and one was female. Their ages ranged from 20 to 62 years, with the average in the early 30's. All were in good health before death and all died between the hours of 11 p.m. and 8 a.m.

The pattern, Vernon says, somewhat resembles a series of deaths among young Filipinos and Hawaiians reported in the 1940's and 1950's. That phenomenon was called "bangangut," after the Filipino word for nightmare. Several theories were proposed, but none confirmed the cause of death. It is possible, Vernon says, that the Hmong are particularly susceptible to stress and are dying of fright, homesickness, and grief. He notes that the native culture, while not primitive, has little in common with America of 1981. For example, the Hmong have only had an alphabet for 30 years. The culture shock of relocating from the mountain jungles of Laos to the high-rises of Minneapolis must be intense.

In addition to the theory of death by stress or nightmare fright, the CDC is looking into the possibility that the Hmong may have been weakened by exposure to chemical warfare agents. It is also possible that the Hmong are congenitally susceptible to cardiac arrhythmia or sudden death in sleep (sleep apnea), or may suffer from subtle infections that damage the heart.

Unexplained sudden deaths are rare, but not unheard of, says one of the nation's experts in the field, Joseph Davis, medical examiner of Miami. He mentions hex deaths, in which susceptible people are scared into paroxysms of asthma or cardiac arrhythmia with voodoo techniques. And he cites a more mundane phenomenon, exemplified by two recent cases in Miami. In one, a 17-year-old bridesmaid dropped dead during the processional from the wedding altar, and in the second, a 15-year-old contestant in a Miss Teenage America contest keeled over before an audience in a department store. Neither had a history of poor health or drug use.

Although Davis has not been able to establish the precise cause of death in cases such as these, he does know that the heart, in these two cases at least, was in fibrillation. This and some clinical research done at the University of Texas led him to believe that the victims probably suffered from a congenital weakness of the autonomic system that caused the heart to beat irregularly and even fibrillate in moments of intense emotional stress. Davis suspects that the Hmong may have developed a similar weakness, probably congenital, through inbreeding. But, he adds, the theory is purely speculative. —ELIOT MARSHALL

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