INTERNATIONAL NOTES
CHOLERA – Worldwide

After remaining relatively quiescent in 1972 and the first part of 1973, cholera again came into prominence when it invaded Italy and several imported cases occurred in 4 other European countries. It also caused concern in the drought-affected Sahelian areas of West Africa. Mozambique and Malawi, which had not previously recorded the presence of cholera in this pandemic, have reported cases in September and October.

In Asia, Sri Lanka has reported cholera for the first time since 1953. Thailand and the Khmer Republic have reported cases again after remaining free since 1969 and 1968, respectively. One indigenous case of cholera has been detected in Texas, and the source of infection is still being investigated (MMWR, Vol. 22, Nos. 35, 36, 37). The last reported case of non-laboratory associated classical cholera in the United States was in 1911.

The global cholera situation during the first 5 months of 1973 has been reported earlier *(1)*. During that period only 6 countries in Africa and 9 in Asia were affected. By October 24, although reporting is not complete, 13 countries in Africa, 14 in Asia, and 1 in Europe have reported the disease, in addition to the 1 case in the United States and 25 imported cases in France, the Federal Republic of Germany including West Berlin, Sweden, and the United Kingdom.

In Africa, cholera was not reported to have caused a major public health problem in any of the previously infected areas, except in 4 of the 6 drought-affected Sahelian countries. Though accurate information on the magnitude of the specific problem caused by cholera in such situations is difficult to obtain, acute dehydrating diarrheas along with cholera have been noted to take a heavy toll of human lives. As far as it could be ascertained, cholera occurred in sporadic fashion over wide areas, and the incidence has apparently declined since the end of July when the rains set in. Case fatality has been markedly reduced in certain areas where mobile teams have been used extensively. The prevailing causative agent in these countries is *Vibrio cholerae*, biotype El Tor, serotype Ogawa, but in Mozambique it is serotype Inaba.

In Asia, the cholera situation in Thailand, Indonesia, and Sabah appears to be improving. Thailand has reported the causative agent to be *V. cholerae*, biotype El Tor, serotype Ogawa, while that in the Khmer Republic appears to be serotype Inaba.

The epidemic in Italy was due to serotype Ogawa. The areas of Bari, Cagliari, Caserta, Naples, and Taranto were declared free from infection on October 12, while Lecce remains an infected area. The invasion of southern Italy by cholera resulted in 25 notified deaths. Every year in this part of the country there are some 1,200 deaths attributed to diarrhea, which represent about 40% of the national total of more than 3,000 diarrheal deaths *(2)*.

The case in the United States and the 25 imported cases in different countries in Europe without further spread demonstrate again that cholera can be introduced to any part of the world but will generate secondary cases only in areas that are "cholera receptive" in terms of sanitation and personal and food hygiene.

(Reported by the World Health Organization: Weekly Epidemiological Record *48:413, 26 October 1973.)*

References

1. World Health Organization: Weekly Epidemiological Record 48:281-282, 13 July 1973
2. *Annuario di Statistiche Sanitarie*, Vols. XIII, XIV, & XV, 1967, 1968, 1969, *Istituto Centrale di Statistica* (Roma, 1970, 1971, 1972) and *World Health Statistics Annual*, 1970 and 1969 (Geneva 1972, 1973)

EPIDEMIOLOGIC NOTES AND REPORTS
TOXIC PERIPHERAL POLYNEUROPATHY – Ohio

In mid-August 1973, a 43-year-old male employee of a plant producing vinyl-coated cloth presented to the neurosurgery service of the Ohio State University Hospital complaining of having been weak since May. On neurologic examination he was found to have bilateral weakness of the wrist extensors, wrist flexors, finger extensors, finger flexors, and finger abductors. He also had foot drop, absent ankle deep tendon reflexes, and atrophy of the interosseous muscles bilaterally. Electromyography confirmed the diagnosis of a relatively acute peripheral neuropathy. No etiology was determined.

The patient revealed that 5 other employees in his department at the factory (the print department) had a similar illness. Four had been hospitalized, and 1 had been treated as an outpatient. These cases were reported to the Division of Occupational Health, Ohio Department of Health.

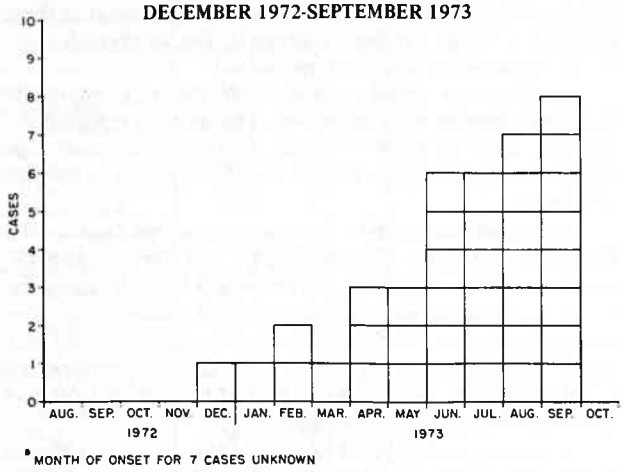
Suspecting that a toxic agent might be present in the plant, health officials performed electromyograms (EMG) on 1,156 employees. Those with abnormal EMGs were given a neurologic examination and were interviewed about previous neurologic disease. A total of 45 employees were found to have symptoms, signs, and EMGs consistent with an acute peripheral neuropathy not attributable to a known cause.

Epidemiologic investigation revealed that 35 of the 45 employees worked in the print department where a mixture of methyl ethyl ketone and methyl butyl ketone (MBK) was used in large quantities as a solvent. This material was used less frequently and in much smaller quantities in other areas of the plant. MBK was first used in August 1972 and was put into full use by December 1972. Cases began in December 1972 and are shown by dates of symptom onset in Figure 1. As no other changes in materials had occurred in the past several years, MBK was implicated as the toxic agent. Furthermore, workers in an almost identical coated fabric factory in California in which MBK was not used had no disease.

Measurements of organic solvents in the print department atmosphere revealed several instances where vapor concentrations exceeded OSHA (Occupational Safety and Health Administration) standards. Printing machine operators, who had the highest attack rate as a group, were exposed to the highest concentrations of solvent vapors. In addition, they had significant exposure through other routes. Work practices and lack of protective clothing may have resulted in excessive skin exposure. Employees eating on the job demonstrated a

PERIPHERAL POLYNEUROPATHY – Continued

Figure 1
38 PERIPHERAL NEUROPATHY CASES, BY MONTH OF ONSET* IN OHIO FACTORY WORKERS DECEMBER 1972-SEPTEMBER 1973



*MONTH OF ONSET FOR 7 CASES UNKNOWN

significantly greater risk of acquiring the disease than those who did not. Finally, the affected employees worked significantly more overtime than nonaffected employees.

The affected department was closed for 1 month in early September 1973. MBK was removed from production materials, improved ventilation was installed, and improved working practices were instituted.

Since the department's reopening in early October, no new cases of peripheral neuropathy have been discovered. The National Institute of Occupational Safety and Health is investigating the use of MBK in other areas of the country.

(Reported by Mary Ann Gilchrist, M.D., Neurology Resident, William E. Hunt, M.D., Director of Neurosurgery, Norman Allen, M.D., Director of Neurology, Ohio State University Hospital; H. T. Yee, M.S., Principal Engineer, Donald J. Billmaier, M.D., Medical Chief, Dorothy Benning, R.N., Acting Chief, Ohio Division of Occupational Health, John H. Ackerman, M.D., State Epidemiologist, John W. Cashman, M.D., Director, Ohio Department of Health; Albert Starr, Chief, Occupational Health Section, California State Department of Health; the Biometry Branch, Division of Field Studies and Clinical Investigations, National Institute of Occupational Safety and Health, CDC; and an EIS Officer.)

Editorial Note

Neither MBK nor any of the other agents used in the plant have previously been associated with such an illness. Despite the use of a large variety of chemical compounds making it difficult to single out MBK as the sole toxic agent, no other agent appeared responsible. Animal experiments currently in progress may confirm MBK's neurotoxicity.

Even without unequivocal identification of an agent, the outbreak illustrates the potential hazards of industrial solvents. MBK has come into widespread industrial use only in the past 2 or 3 years. As with many industrial solvents, only effects of acute exposure were investigated for the establishment of safety standards. In this outbreak, significant effects of a chronic exposure were noted from a solvent which was thought to be safe. Furthermore, workers were exposed to large amounts of MBK by inadequate ventilation and general lack of appreciation for established safety procedures for working with organic solvents. Even if another agent had been involved, the outbreak terminated with the institution of proper ventilation and safe work practices.

INFLUENZA – Sweden, United States

Sweden

The incidence of clinical influenza is reported to be relatively high throughout the country. Surveillance indices for Sweden's 3 largest cities were 25% above baseline values during the last week in December. All virological data implicate influenza B as the etiologic agent of this outbreak. There have been no virologically confirmed cases of influenza A in Sweden.

(Reported by the National Bacteriological Laboratory, Stockholm.)

United States

Influenza surveillance indices in this country remain at normal seasonal levels indicating that there is not a significant amount of influenza present at this time. The pneumonia and influenza mortality statistics for 121 U.S. cities (Figure 2) indicate that pneumonia-influenza deaths are within the expected range both regionally and nationally.

(Reported by the Viral Diseases Branch, Bureau of Epidemiology, CDC.)

TURTLE-ASSOCIATED SALMONELLOSIS – Washington

On July 26, 1973, a 4-year-old girl from Edmonds, Washington, became ill with fever, abdominal pain, and diarrhea, 1 day after arriving with a 6-year-old sibling and a cousin for a vacation visit with her grandmother. On July 30, the grandmother, who had taken care of the girl, became ill with stomach cramps, headache, fever, and diarrhea. Each of the other 2 children and the girl's father and mother remained asymptomatic. *Salmonella java* was isolated from the girl's stool.

Epidemiologic investigation by state health department officials revealed that on June 5, 1973, an aunt had purchased 2 red-eared turtles from a pet shop in the area and had given them to the patient on her birthday, June 6. These turtles were from a lot of 100 purchased on April 9 from a commercial producer in Belzoni, Mississippi, and certified as "salmonella-free" by that state. Coincidentally, on June 5 the Seattle-King County Health Department had visited the pet shop, tested the turtles for salmonella, and found them positive for *S. java.* Only 4 turtles of the lot remained at the pet store, and they were destroyed.

On August 7, the patient's home was visited and 2 live turtles, the aquarium, aquarium water, turtle foods, sweepings from a vacuum cleaner, and a water sample from an outdoor swimming pool were collected for laboratory examination. *S. java* was isolated from the turtles, aquarium water, and vacuum sweepings. Specimens of turtle food and swimming pool water were negative.

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CENTER FOR DISEASE CONTROL

Morbidity and Mortality

Vol. 23, No. 1

WEEKLY REPORT

For Week Ending January 5, 1974

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE

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EPIDEMIOLOGIC NOTES AND REPORTS

CARBON MONOXIDE POISONING – Mississippi

The current energy crisis may be accompanied by an increase in carbon monoxide poisoning. Fuel shortages will spawn the use of various devices for providing additional heat in homes. Fireplaces and other heating facilities which have not been used recently may be placed into operation. Catalytic heaters, charcoal-burning units, and similar devices may be used indoors or in confined spaces. Many individuals will undoubtly resort to "makeshift" measures to prevent the loss of heat from their homes, including installing additional insulation, sealing cracks and crevices, covering windows with plastic, and using other measures which tend to make the home "airtight". Any measure that reduces the amount of air movement into a home, coupled with a defective heating device or the improper use of a combustible fuel indoors enhances the potential for poisoning by carbon monoxide. Health officials are urged to work with private organizations, industry, and the news media in publicizing the carbon monoxide hazards associated with improper heating devices, as illustrated by the accompaning report from Mississippi.

On the evening of September 7, 1973, a family of 7 from Hinds County, Mississippi, began to experience lassitude, headaches, and malaise. Their symptoms abated during the next day but returned that night; several of the children had nausea and vomiting. The following day the symptoms again disappeared, but they recurred that evening.

On September 10, 2 of the family consulted a private physician. He noted that they had fever (101°–102° F) and prescribed symptomatic treatment for their malaise, nausea, and vomiting.

The next evening the entire family again had headaches, malaise, and intermittent nausea and vomiting followed by dizziness and syncope, and the next morning they all stayed home. Later that day they were found unconscious by a relative and were taken by ambulance to a nearby hospital.

In the emergency room all family members were found to be stuporous and febrile, and several of the children had flushed skin color. Two family members were given oxygen nasally. All had normal chest X-rays. The diagnosis of carbon monoxide poisoning was made, and all 7 were admitted to the hospital for observation; the following morning they had completely recovered and were discharged. Blood specimens obtained in the emergency room from the 7 family members and tested for carboxyhemoglobin levels by the Toxicology Department, University of Mississippi Medical Center, all showed elevated levels.

Representatives from the Hinds County Health Department and a local utility company visited the home of the affected family and found a leaking hot water faucet and an improperly vented gas hot water heater. The leaking faucet was thought to have caused the hot water heater to operate continually. Carbon monoxide levels in the house were measured and were markedly elevated (0.1 volume percent or 1,000 ppm).

(Reported by Dan J. Mitchell, M.D., private physician, Jackson; Robert B. Ireland, M.D., private physician, Clinton; Arthur Hume, M.D., Assistant Professor of Pharmacology and Toxicology, University of Mississippi Medical Center; Eric McVey, M.D., Director, Hinds County Health Department; Durward L. Blakey, M.D., State Epidemiologist, Mississippi State Board of Health; and an EIS Officer.)

Editorial Note

The fact that carbon monoxide poisoning can produce fever, leukocytosis, and an abnormal urinary sediment is not generally appreciated. In this instance, the diagnosis of carbon monoxide poisoning was not considered initially when several family members presented with gastrointestinal complaints and fever but was made only after mental changes had occurred several days later and several of the children were noted to have a slightly flushed appearance.

The source of carbon monoxide in the household was thought to be fumes produced from combustion of natural gas in an improperly vented water heater, not fumes from leaking unburned natural gas. In the United States, natural gas does not contain carbon monoxide *(1)*.

Reference

1. Finck PA: Exposure to carbon monoxide. Review of the literature and 567 autopsies. Milit Med 131:1513-1539, 1966

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