lates a much higher antibody response than duck embryo vaccine and at least at this point has *not* been associated with any serious anaphylactic, neuroparalytic or systemic reactions.

Physicians are again reminded that bites from gophers, squirrels, rats, mice, hamsters, rabbits, chipmunks, muskrats, guinea pigs, moles and chinchillas seldom if ever require systemic antirabies treatment. On the other hand bites from animals such as bats, bobcats, coyotes, foxes, skunks and other feral species should be considered as rabies exposure until proven otherwise.

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Malaria Prophylaxis

ON MARCH 10, 1978 the Parasitic Disease Division of the Center for Disease Control (CDC) published a supplement entitled *Chemoprophylaxis of Malaria* which includes recommendations to travelers and a comprehensive review of the agents available. The following is a brief summary:

Chloroquine phosphate is the drug of choice for suppression, that is, prevention of clinical symptoms of malaria by strains sensitive to the drug. The recommended adult dose is 500 mg (300 mg base) taken weekly; 5 mg per kg of body weight base for children taken weekly beginning two weeks before entering a malarious area and continuing for six weeks after leaving. In this dosage, side effects other than gastrointestinal disturbances—headache, dizziness and blurred vision—are rare. These adverse reactions may be reduced by taking chloroquine with meals. Travelers should be told that this regimen may not protect against chloroquine resistant forms.

Chloroquine suppresses the erythrocytic stages of Plasmodium and if the above regimen is followed, Plasmodium falciparum and Plasmodium malariae, which do not persist in exoerythrocytic phases, will usually be eradicated.

Infection with Plasmodium vivax and Plasmodium ovale may persist in the liver and produce delayed attacks. The exoerythrocytic form is eliminated by a two-week course of primaquine, 15 mg daily for adults and 0.3 mg per kg of body weight daily for children. The use of primaquine for prophylaxis should be reserved for travelers heavily exposed to malaria, who do not have glucose-6-phosphate dehydrogenase (G6PD) deficiency. This drug is not recommended for pregnant women.

Cases of chloroquine-resistant P. falciparum have been documented in Panama, South America, India, Southeast Asia, New Guinea and, most recently, in persons returning from Africa. Travelers may consult their health department or the CDC for information about specific countries. A combination of pyrimethamine and sulfadoxine is an effective suppressive agent for chloroquine-resistant P. falciparum. It is not at present available in the United States but may be purchased in other countries. Travelers may start taking chloroquine before entering the malarious area and then take pyrimethamine, 50 mg, and sulfadoxine, 1,000 mg, once every two weeks continuing for six weeks after last exposure in a malarious area. This combination is active against the erythrocytic stages of malaria. Pyrimethamine-resistant strains of P. vivax will not be suppressed. This preparation is not recommended for pregnant women.

As with all medications, travelers are advised to take a sufficient supply with them for the entire trip. Clinicians should remember that the incubation period of malaria may be prolonged for months in persons who have taken antimalarials. Serologies (done by the Center for Disease Control) are useful in cases in which there is a question of mixed infection where primaquine therapy is being considered.

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Joy of the Communal Bath or Don't Go Near the Water

AS HOT TUBS, whirlpool baths and pools become a more regular feature of private and public recreation, clinicians can expect to see the infectious complications of these communal pools. Common offending agents include Pseudomonas aeroginosa, Staphylococcus aureus, viruses including enteroviruses and adenoviruses, and Mycobacterium marinum.

Several outbreaks traced to Pseudomonas aeroginosa serogroup 11 contamination of whirlpools have been recognized. High temperatures and

activation of water makes maintainence of proper disinfectant residuals (0.4 ppm of free chlorine) difficult in whirlpools. Eradication of Pseudomonas, an organism adapted to water and capable of growth at 42°C, is a special problem. High water temperature and hydration may alter the skin; that is, dilate pores and promote infection with Pseudomonas. Skin manifestations of Pseudomonas infection include pruritic papulovesicular or vesiculopustural rash which develops 8 to 48 hours after exposure, and usually resolves over a period of seven to ten days without specific treatment. In addition, sore throat, sore eyes, fever, malaise, nausea, vomiting and otitis externa have occurred following exposure to Pseudomonas infected water.

Swimmer's ear or diffuse otitis externa may be caused by Pseudomonas, Staphylococcus, Escherichia coli and Enterobacter aerogenes. Therapy usually consists of administering local otic preparations containing antibiotics, such as colistin or neomycin. Recurrent swimmer's ear may be treated prophylactically with a solution such as 2 percent acetic acid in glycerin base instilled in the canal after swimming.

Epidemic adenovirus conjunctivitis and pharyngo-conjunctival fever have resulted from swimming pool contamination. Most outbreaks have been related to inadequate chlorination. The incubation period is five to nine days, and fever, pharyngitis and conjunctivitis are characteristic. Adenovirus infection is usually self-limited.

Mycobacterium marinum is the etiologic agent of swimming pool granuloma or chronic granuloma of the skin. The skin lesion usually results from trauma to the skin (often forgotten) in a swimming pool or while cleaning a fish tank. A small, red, nontender papule that may drain pus intermittently results. The lesions may resolve spontaneously or may require chemotherapy, such as with minocycline hydrochloride, or surgical excision.

If you suspect that a patient has acquired disease from a communal pool, contact your local health department so that an epidemiologic investigation and sanitation inspection can be undertaken.

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Screening Methods for Tuberculosis Control

THE COURT PHYSICIAN in China approximately 2,000 years ago is reputed to have advised the emperor that "to administer medicines to diseases which have already developed . . . is comparable to the behavior of those persons who begin to dig a well after they have become thirsty, and of those who begin to cast weapons after they have engaged in battle." Would not these actions be too late?

Similarly, the Center for Disease Control in recent years has changed the thinking in regards to the status of tuberculosis control. First, they state that 80 percent of future active cases will come from the pool of persons who were infected with mycobacterium tuberculosis years ago and in whom the bacilli remain dormant. The other 20 percent will be contacts of recently identified infectious cases. Before 1976 most cases nationwide were found in persons 45 years old and older. The incidence of tuberculosis among older persons continued to increase nationally, but in California more new cases are seen now in persons younger than 45.

Program objectives in any tuberculosis control program are as follows: (1) infectious persons must become noninfectious, (2) noninfectious persons (who are infected with tubercle bacilli) must remain noninfectious and (3) persons not infected must remain not infected. In order to achieve these objectives, the classification of tuberculosis was changed in 1974. The following is the currently accepted classification:

0. No tuberculosis exposure, not infected (no history of exposure, negative tuberculin skin test).

I. Tuberculosis exposure, no evidence of infection (history of exposure, negative tuberculin skin test).

II. Tuberculous infection, without disease (positive tuberculin skin test, negative bacteriological studies [if done], no x-ray findings compatible with tuberculosis, no symptoms due to tuberculosis).

III. Tuberculosis: infected, with disease.

Classifications I and II are where the current emphasis of control programs is now directed. The intimate contacts of a classification I patient, especially infants and children, are advised to be placed for a minimum of three months on an appropriate isoniazid course of chemotherapy