same. Had these human bones been of any other species, no question of association would be raised. All would agree that they were contemporaneous.

In the Lagow Sand Pit it is necessary to lay aside the association of "modern man" with Pleistocene fossils as due to burial by landslide, by recent stream action, by uprooting trees, or by any agency except a human agency. If the remains were buried by human agency, two things appear remarkable: First, that there was no visible evidence of the grave having been dug, although the skeleton was found in a sand layer beneath two beds of clay; second, that while the deposits of fossils in certain areas of the pit were much richer than others, and occupy limited areas in the pit, the location of the supposed grave was, *mirabile dictu,* placed exactly in such a limited fossiliferous area as would have occurred if laid down contemporaneously with the other fossils.

An account of this occurrence was withheld from print in the hope that further material would be found. At least a dozen occurrences in North America report human remains or artifacts associated with Pleistocene fossils or Pleistocene deposits. A review of these cases shows that in applying the theory of the multiple hypothesis, the most elaborate and involved explanation is always chosen rather than the simple direct fact of visible association and contemporaneity. Should a visible association be of less importance than a preconceived notion as to the type of man which ought to be uncovered with Pleistocene fossils?

ELLIS W. SHULER
SOUTHERN METHODIST UNIVERSITY,
DALLAS, TEXAS

THE EFFECT OF SODIUM HYPOCHLORITE UPON THE SPORES OF AMERICAN FOUL BROOD (BACILLUS LARVAE)

DURING the past year we have conducted a number of experiments with various preparations of sodium hypochlorite to determine whether or not this chemical has any value in destroying the spores of *Bacillus larvæ.*

Three lines of experiments were used:

(1) To determine if diluted solutions in sugar syrup fed to the bees would have any effect on control of the disease in a working colony.

(2) To determine if combs containing dead larvæ or dry extracting combs from diseased colonies might be treated and used again without carrying the infection.

(3) To determine if infected honey might be treated so that it could be fed back to the bees without danger of carrying the infection.

(4) To determine if sodium hypochlorite might be used as a disinfectant for hives, hive parts, extractors and other equipment.

The results of these experiments show that sodium hypochlorite has a solvent action on dead bees, pollen, cocoons and other debris in the combs but that it does not injure the wax, and while certain concentrated solutions will dissolve a dead bee in a short time, diluted they are not at all harmful to the bees when added to their food.

Larvæ dead from foul brood and living in the cells as scales were completely dissolved out in twenty-four hours. Four of these combs placed in colonies of bees in June remained free of disease throughout the summer, although the bees continued to rear brood in them.

Sugar syrup to which a water solution of spores had been added failed to carry the disease when treated with a 1 to 25 dilution of a 3 per cent. solution of sodium hypochlorite.

In an experiment where three colonies of bees were fed a diluted solution of diseased honey treated with sodium hypochlorite, two of the colonies had not showed any signs of disease six weeks after feeding; the third colony developed the disease but there is evidence to show that the disease may have come from an outside source.

For disinfecting hive bodies and equipment a special solution was found to be a hundred per cent. efficient.

Experiments in feeding to counteract the disease in colonies already infected were unsuccessful.

The particular value of a special hypochlorite finally decided upon is that it destroys the spores wherever it comes in contact with them but is not poisonous and may be fed in syrup or honey to the bees without apparent injury to them.

H. F. WILSON
W. A. HADFIELD
MADISON, WISCONSIN