

The first lesson deals with the general nature and classification of micro-organisms; the second with the growth of bacteria, their requirements, and distribution in Nature. In this connection are given details as to the rate of their multiplication, spore formation, their requirements for growth, such as moisture, food, temperature, light, and with their distribution in Nature. Then there is a lesson on the Chemical Activities of Bacteria and their power of producing disease. Thus "putrefaction is one of the most obvious and familiar results of bacterial action." The way disease is produced, as a rule, by bacteria is, we are told, by their gaining access to the body and growing and multiplying there. "In order to do this they must be able to grow at the temperature of the animal body, and in addition they must have the power of getting their food from the living animal tissues, and not merely from dead organic matter." The distinction between parasites and saprophytes is described, and the cause of infective diseases.

The next lesson deals with the artificial cultivation of bacteria, with the various culture media, both liquid and solid, with the sterilisation of media, the method of discontinuous sterilisation being fully detailed in this connection, as are also the methods of preparing surface and slab cultures, and the methods of inoculation, and plate cultures.

Then come no fewer than five lessons dealing with disinfection. Disinfection by heat, by chemicals, aerial disinfection, and the sterilisation of fluids by filtration, disinfection in surgery and midwifery, and in medical cases. We read: "The mystery which, in former ages, enshrouded the spread of infectious disease is now in great part abolished. We no longer look upon infection as a vague exhalation from the patient or from those who have been in contact with him. It is an accepted doctrine that all infectious diseases are due to micro-organisms, and that the mysterious something which leaves the patient's body and causes the disease in others is a concrete living microbe. It is true that this is not absolutely proved in detail for every infectious disease, but it is completely proved in many and partially proved in others. There are still some fevers in which the casual agent has eluded detection; but we believe these also to be due to micro-organisms, because it is incredible that a poison which is capable of indefinite multiplication should be other than a living organism. It is the future task of bacteriology to trace the nature of these unknown microbes, as it has traced those already known."

The tenth lesson gives a short account of some of the bacteria concerned in infection, such as the bacillus of plague, which most commonly penetrates the skin by some crack or abrasion, and reaching the nearest lymphatic glands, gives rise to the characteristic "buboes." In another, and even more dangerous, though less common, form the bacilli gain access to the body by the respiratory tract, and set up an acute pneumonia. In either case they are liable to pass into the blood and set up a general plague septicaemia. This general infection is not uncommon shortly before death, and all the secretions may then become infectious—the pus from suppurating buboes and the sputum included. This is but one instance, but the details as to other diseases are equally interesting. Every nurse should possess and study this book.

## Outside the Gates.

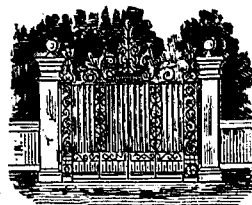
### FLOWERS OF THE SEASON.

#### CHAPTER IX.

By MRS. C. CARMICHAEL STOPES.

#### SEPTEMBER.

"Come out, 'tis now September,  
The hunter's moon's begun."



In the Southern counties at least, most of the corn-fields have been reaped, and from among the stubble peep up many little flowers for their late chance of enjoying the pleasure of the autumn sun in cultivated soil. The purplish-red Corn-cockle, with its downy leaves; the Scarlet Poppy; the Yellow Goat's Beard, so called from the downy wings of its seeds. This latter plant is sometimes cultivated in kitchen gardens, and its roots, when young, are boiled and eaten as Salsafy, especially in France, and its young seeds are cooked like Asparagus. Its bright yellow flowers have this peculiarity, that, though they awake with the sun, they close at twelve o'clock. Children therefore call them "Go-to-bed-at-noon," and poets as well as botanists have noted that "Flora's clock, the Goat's Beard, marks the hours." Linnæus observed this peculiarity of certain flowers, and arranged scientifically what has been called a floral clock by grouping plants according to their hours of opening and of shutting. He called the plants he used the "solar plants," or those who were specially affected by the sun. Between the furrows among the stubble you may find the light yellow or white small Violet, the little Sandwort, the Spurrey, the field Veronicas, the scarlet and yellow Pimpernels, and the Dodder—that annual parasite among the corn, not turning upwards now since its support has gone, but creeping on the stubbly ground. Round the banks and by the hedges there are many survivals from last month—the yellow Oxeye, the blue field Scabious, and the dark blue Cornflower or Bluebottle. The late Emperor of Germany, grandfather of the present one, loved this flower above all others, and chose it as his emblem. Years ago, when I saw over the Royal Palaces of Germany, I was surprised at first to find the plant so honoured. In halls, reception-rooms, and bedrooms, where one would have expected costly exotics, or great Roses at least, were basins of this simple flower. But the owner of all loved it; with his simple tastes and Spartan arrangements in regard to his own comforts, it harmonised very well. Elizabeth Rowe, the philosopher, poet, and botanist, loved it too, and learned how to express the beautiful blue from its own juices to paint its own rich colours.

Trailing and twining everywhere, over the fields, the banks, and the walls, is the delicate but hardy small Bindweed, or the lesser pink Convolvulus, creeping where she cannot climb, climbing where she finds a prop. It is well to note that she always twines from west to east, while other climbing plants twine from east to west, for this is at times a guide, sure as a compass, to one who has lost his way. Her delicate trumpet-shaped corollas open wide, to shelter their

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