

have been struck by one point of similarity in them all, and that is the colorless characters and subordinate positions assigned to the mothers. And upon reflection I think this has become a marked characteristic of American fiction. I recall numberless novels, the heroines of which are bright, intelligent girls, the common American type, on good terms with their fathers, whom they generally resemble. The fathers are of all sorts, but the mothers only vary in being garrulous or silent; they are all essentially commonplace, doing the housework, without influence in the family, domineered over by the daughters, and treated with good-natured contempt by their husbands. Is this a true picture of American life? If so, what becomes of all the vivacious, intelligent girls? If marriage deprives them of the graces of girlhood, and arrests the development of its nobler qualities of maturity, they would be wise to remain unmarried. But I do not think it a true picture. Certainly it is not true of the women of the South-west. I know many noble, intelligent women, of middle age, mothers of grown daughters, on whom their influence is very apparent. They take no very active part in society, for they have no time, being strongly disposed to keep the burden of household labor from their daughters. This is not surprising when one remembers that they must know from experience that in this servant-less land there is little relief from domestic drudgery after marriage. What American girls, with the liberty allowed them, might become without the wise conservative influence of the mothers I dread to contemplate. Nor is the American girl as black as she is painted. Though she generally thinks she is as good a judge of "what is what" as any one, she has an unbounded love and reverence for her mother, and often yields, out of respect to her, to opinions which she considers old-fashioned or prudish. Though the position of the mother must be an inconspicuous one, her influence is the strongest in the world. American novelists should depict American mothers as most of them are: intelligent, devoted, self-sacrificing.

L. M. Bedinger.

Carbolic Acid in the Household.

FIVE years ago, I was one day reading Tyndall's address before the Glasgow Science Lecture Association on "Fermentation and its Bearings on Disease." In that address he speaks of Professor Lister's wonderful success in the treatment of wounds by spraying them with carbolic acid while they were exposed to the air. While I was reading, a very white face showed itself at the door, and an awe-struck voice said, "Mother, Jane has hurt herself dreadfully." Jane was one of the old time "house servants" of Maryland, faithful, brave, plucky, but opinionated to the last degree, and immovably obstinate when she took a stand, which, however, was never done except upon a purely personal question.

Jane was found ghastly with the pallor which only a very black skin can show. She held out her thumb, from the ball of which an enormous splinter, as large as a slender lead-pencil, was projecting about an inch,—a hurt obtained in scrubbing very energetically. "Go for the doctor," were my first words, for I

knew the danger of lockjaw from such a deep, narrow-mouthed wound. Jane replied at once, with perfect respect, but with unflinching determination, "I don' wan' no doctor, Mis' S—. Ef you can't pull it out, I'll jes' let it stay in." Arguments and exhortations were ineffectual against her iron resolve.

I did not dare, in my inexperience, to cut into the flesh and muscles to get hold of the proper end of the stick, and I could see nothing else to do but to draw the splinter through before the parts had had time to swell. I happened to own a fine pair of surgical forceps and scissors, with which I laid open the upper part of the wound, where the wood was near the surface. I then caused Jane to be firmly held, and succeeded in drawing the splinter through and out of the wound.

My next thought was of Tyndall's article and Lister's treatment, and, as the best device which I could think of at the moment as a substitute for the carbolic spray, I bound the wound up in a linen bandage wet in cold water, and, when it was on, I placed a few drops of carbolic acid on the wet cloth over the two mouths of the wound. My surgical operation over, I posted off to the doctor to ask him if I had done right. He approved, but said, "Why did you apply carbolic acid?" I answered, "Lister dresses wounds always with it, to prevent the access of germs." He laughed at my medical assumption, and said, with the superior air of the profession: "Well, it can do no harm. Call me in if the wound becomes very sore or suppurates." The doctor did not, however, have to be called; the treatment proved wonderfully effectual. I watched my patient carefully and anxiously. There was no suppuration, and scarcely any fever; the wound healed "by the first intention," and with so little soreness, that in three days Jane could do all her work without the least discomfort. The skin was perfectly formed and natural by the fourth day.

This was my first introduction to carbolic acid as a surgical antiseptic. Since then every wound, great or small, happening to a member of the household, which seemed to deserve any attention at all, has been dressed in the same way, and with the same results.

The reason why carbolic acid is so efficacious in many diseases, as well as in the dressing of wounds, is plain. Molding, fermentation, decay, the souring of milk, the suppuration of wounds, and the propagation of certain diseases are all due to the same cause,—to the presence of the germs of certain fungus-plants. The air we breathe is full of such vegetable germs; every breeze sows them broadcast, and every organic substance which is at all moist offers soil for their growth and development. Myriads are sown everywhere; some of them take root and grow in one substance, some in another; those which do not find the peculiar nutriment they need, perish. It was for a long time supposed that the same germ produced different organisms when deposited in different fluids,—that the mold on an old boot, the fermentation in a jar of preserves, the change of grape-juice into wine, and of wine into vinegar, were merely manifestations of the same living organism under different conditions,—but the exhaustive researches of Pasteur have proved that the stern law which was impressed upon the vegetable world when it came into being, that each was to bear seed "after his kind," is as inexorably true of the organ-

isms which elude all but the most penetrating microscopic power as it is of the mighty forest-oaks and gigantic mountain-pines. The true explanation of the phenomenon was that the air sowed all kinds of seed everywhere, but that these only sprang up where they found congenial soil. The wind-sowed germs falling upon the surface of bread, or cheese, or sweet-meats, grow into airy forests of pearls and emeralds and topazes, which we, with our coarse vision and rude classification, contemptuously name mold.

If, instead of falling on the surface of preserves, the air gets mixed through them, when it finally escapes it leaves the tiny germs behind. If these could find no oxygen, they would as surely be smothered and die as an insect would under the same circumstances; but the fungus has a resource which the superior insects lack. They can manufacture their oxygen out of the sugar in the syrup. Sugar is a compound of several substances, among others, of oxygen. When this oxygen is removed, there is no longer the compound sugar, but there remains some alcohol and other things. The preserves, if the process goes on long enough, lose their sweetness; they have the "tang" of alcoholic spirit in their taste, as well as the acidity which is the absence of sugar. It is not the air which hurts canned goods, but the germs that the air carries with it. When air is perfectly filtered, milk, meat, fruit—anything, no matter how delicate—may be exposed to it for a year or more, and they will not suffer any deterioration.

Decay is an analogous process. Certain germs live and grow at the expense of the substance in which they have been sowed, the substance is thrown out of chemical equilibrium, and we call it popularly "decayed," or "spoiled." An open wound offers just the nutritious garden-spot suitable for the development of certain germs, which are always in the air; they grow, taking out of the living blood some element necessary to its healthy equilibrium, and the blood becomes diseased. Nature attempts to resist this invasion, to restore the balance, and, in the attempt to throw off the diseased particles, suppuration ensues.

Carbolic acid is deadly to these germs. When it is sprayed upon an open wound, all the germs which have found their way into it are destroyed. The curative process becomes very much simplified. It is merely the healing over of torn nerves and muscles and skin. The work of nature is direct; she has no enemy with which to contend at each step in repairing damages.

The other domestic uses of carbolic acid are due to this germ-destroying power. It is used as an antiseptic in cases of typhoid fever, which is a disease of the alimentary canal, and is propagated by germs. It is applied to correct any possible invasion of sewer-gas, whose poison is due to the presence of germs. In cases of small-pox, or virulent chicken-pox, the greatest relief to the pain and soreness and irritation may be found in bathing the patient frequently in hot water with carbolic soap, and then anointing the body with a mixture of glycerine and carbolic acid in the proportions of sixty drops or a teaspoonful of glycerine to one drop of strong carbolic acid.

During the Franco-German war, a remedy in the case of wounds and certain contagious diseases was much used which is now being introduced into this country under the name of Phenol-sodique. Phenol

is only another name for carbolic acid, and this preparation is only more valuable for domestic purposes because it has a uniform and known strength, which it is impossible to get with any certainty in carbolic acid.

It must be borne in mind that carbolic acid is a violent poison from its corrosive power. In case of accident from swallowing it, olive oil, taken in large quantities, is the proper antidote.

S. B. H.

To Americans Seeking New Homes.

THOUGH the times are, for the present, prosperous, the cities are nevertheless over-stocked, and so are the professions, trades, and many branches of skilled labor in them. Persons out of employment naturally look to the country, and mostly to the West, with the thought of opening up new tracts of land. We have a word of advice to such as propose to join the migrating band, whether they be lawyers or laborers, cultured or ignorant. If you are past middle age, hesitate before you leave your old home, habits, and ties too far behind you. The strain of such total disorganization of outward life kindles the energies of a young man, but tells terribly on the temper and disposition of an old one. What your boys will gain in the possession of land, they will lose in the influences of a cheerless home, and the companionships of parents over-worked, anxious, and irritable. Trust nobody in the selection of a new home. See for yourself. Examine into the soil, water, markets, business chances, etc., at whatever cost.

In packing to move, take nothing with you for purposes of show, or to impress your new neighbors with a respect for your social position. Fashion and caste are too heavy burdens to carry into a new country. If you have gentle breeding, good sense, and intelligence, be sure your virtues will find you out, and you will have your proper place given you in any community. Economize, if you must, and take a little store of ready money with you. Rainy days are many in the first year of a settler's life: crops are slow, acclimatization brings sickness.

While farming at the East is said to be suffering from the competition of the cheap lands and virgin soil of the West, it should not be forgotten that there are almost unexplored tracts waiting for the tillers in New York and Pennsylvania, to be had at comparatively low rates. Also in the Virginias and the highlands of the Carolinas, there are said to be farms and timber-land as well adapted for the growth of fruit or the cereals as any in the country. Not many years ago, a miner from the Lehigh region of Pennsylvania, tired of strikes and half-pay, put his wife, children and household goods into a wagon, and set off through the Blue Ridge district of Virginia. The family had little else than bread and water to live upon. They found a high, cool table-land in North Carolina, where the soil was rich to blackness, the water good, the climate equable. They bought a farm at fifty cents an acre, and camped down in the unbroken forest. The mountaineers helped them to raise a log-house. The next year, an energetic New Yorker bought the adjoining section. They have long had their broad fields, fruit, and comfortable homes; and a little log school-