Cooking By Electricity

With the very best cook stoves more than 90 per cent of the heat energy of the coal either escapes up the chimney or makes the kitchen insufficiently hot; only from 4 to 7 per cent of the heat is actually used in cooking. Electricity is an ideal source of heat, as there is absolutely no loss in the change from electricity to heat. It seems practically certain that our coal supply is limited, too costly, and that new and better ways of obtaining heat so necessary for our lives and comfort will be found in the years to come. Steinmetz, the genius of the General Electric company, says that unless some such discovery is made before many years the water powers will have to be harnessed to secure electrical energy, and this energy transmitted to various points and turned into heat.

Electricity can be had on the instant, for electricity travels at the rate of 186,000 miles a second, and in any degree desired, from a warmth that is barely perceptible to the touch to the carbon-melting heat of the electric furnace in which platinum, diamonds and firebrick itself melt and run like water. Electric heat can be carried anywhere about a building and applied just where wanted without serious loss through radiation. Consequently the electric kitchen and the "wooden range" can be operated all day long to cook and bake without raising the temperature of the kitchen to any considerable degree.

How Electricity Produces Heat.

Whenever electricity is flowing through a wire the temperature of that wire is more or less raised above the surrounding atmosphere. The amount of heat developed depends upon the nature of the conducting wire and its size. It is a fact that every path through which electricity flows offers some obstruction to its flow. This quality is known as resistivity, and the resistance of a definite length of wire of a given diameter of any material can readily be measured. If in a circuit of low resistance copper wire a small piece of fine platinum wire, having a very high resistance, is introduced, a current which will barely warm the copper wire will heat the platinum wire white hot. This is because the electricity, so to speak, has to work hard to get past the platinum obstacle in its path, and this work produces heat.

Upon this very principle all the electric heating devices of today are constructed. Take, for instance, the electric chafing-dish. Without the above explanation it is difficult for the laymen to understand where the heat comes from which cooks the fudge or the Welsh rabbit. One can see no flame, nothing that even looks as though it might be hot, yet the contents of the pan is bubbling away, emitting clouds of steam. When the flexible cord is connected to the electric light socket and the current is turned on the electricity flows down the wires in the cord to the "resistance" concealed in the bottom of the chafing-dish. This "resistance," a leaf of special alloy metal, does not allow the current to pass readily, and the energy expended in overcoming this causes it to get very hot.

Household Uses of Electric Heat.

The house electric, wherein all the heating and cooking and most of the housework is done by electricity, is already an assured fact. Over the invisible res of the wooden stove the meals are being cooked, electric radiators warm the rooms and electric power drives the vacuum cleaner, washing machine and wringer, fans, dish-washers, ash-sifter, hair-dryer and a number of other power-driven machines which have already been introduced to lessen the burdens of the housewife. Large restaurants, hotels and clubs are beginning to utilize electric heart in their kitchens.

Electric heating and cooking have already become so common that nearly all of the lighting companies make a special rate for this kind of service, which is considerably less than the regular lighting rate. Under these advantageous conditions electric cooking is but little more costly than cooking by coal or gas, and many times more convenient and sanitary. There is no coal to carry, no dirty soot or ashes, no waste of heat, no overheated kitchen.

In the cities where gas is available the gas range is fast superseding the coal stove because of its greater convenience. A modern gas range costs only about $25, and with gas at from $1 to $1.35 a thousand feet a little over three dollars a month will supply enough to cook for a family of four. But this does not include hot water for washing and toilet purposes. If these were added it would probably double the monthly cost, as an additional water heater costing about $15 would have to be installed and at least $1.50 would be added to the monthly bills. While gas does away with most of the labor required about a coal stove, it is far indeed from being an ideal source of heat. The open gas flame is dirty and extravagently wasteful of the precious heat; it gives off obnoxious odors and is more os less dangerous. On the other hand, the gas stove is so much easier to control and manage than a coal stove that it appeals to the women who have to do the cooking in the house. So, too, does the electric range.

Cooking by electricity is already a recognized practice and the heating engineer now has a recognized profession. A great many families have already taken out their cumbersome coal stoves and odorous gas stoves and installed electric ranges in their kitchens. The complete electric range for a family of four costs about $75. This seems high in comparison with the cost of a coal or gas range, but it must be remembered that with the electric range comes a complete set of aluminum and copper cooking utensils, while with coal or gas you have to purchase these things extra. In most cases these ranges, once purchased, are connected free of charge by the electric lighting company, which is usually very anxious to have people do their cooking by electricity. With these companies the "day load," as the current consumption is spoken of, is very light, and it is not until after dark when the lamps are lighted that the demand for electricity really begins. Therefore, in most cases they are willing to make a low rate of 5 cents a kilowatt, or even less, for electricity used for heating and cooking purposes during the day.

Cost of Electric Cooking.

A kitchen range suitable for four consists of a hardwood table, finished in mission style, completely wired and ready for connecting with the city lines. The utensils consist of a 2-quart cereal cooker, a 2-quart tea kettle, a 3-pint coffee percolator, a 7-inch frying pan, broiler, grid, oven, toaster and a small water heater. Where the lighting plant does not connect the kitchen outfit free of cost it can be readily done by any electrician at a nominal figure. A separate meter registers the amount of electricity used for cooking purposes. Such an outfit can be ecnimically operated at a cost averaging close to $1.25 a month per person or $5 a month for four persons. The electric range does not provide for hot water, but the continuous flow water heater is used in connection with it. With this type of water heater, which is attached to the faucet, the opening of the tap turns on the electricity and the water is heated as fast as it is drawn without a particle of wasted energy. Thirty gallons can be heated in this way for 15 cents.

In one family where gas was obtainable for $1 a thousand feet, the average cost per month for cooking by gas was $3.12. For a time all the cooking was done on gasoline stoves; at a cost of 15 cents per gallon for fuel, the average cost per month was $3.00. A few years before, when gas was impossible, the cooking for this family was done over coal fires at a cost of $7.50 a month. Now the new electric kitchen is used exclusively at an average cost of $6.85, consuming 137 kilowatts a month at a special rate of 5 cents.

Another family of two kept an accurate account and found their bills close to $3.15 a month for electric cooking. When a sister came to live with them the average increased to $4.35 a month. The average cost per person per meal was only $.0143.

In small families the coal stove is especially expensive and burdensome, as it costs just as much to run such a stove for two as it does for six. In large families the average cost diminishes perceptibly. With electricity the rule is exactly opposite, the smaller the family the more economical the cost of cooking becomes.

Throughout the country where electric light service is available the electric cooking and heating devices are also being used extensively to supplement the other sources of heat. Many of the smaller devices are made with flexible cord connections, so that they can be readily attached to the electric light fixture in place of a lamp. Perhaps the best known and most useful of all such appliances is the electric flatiron, which is now common enough in the household. This iron, always at a constant temperature of the apartments on a warm day, saves the seconds in the home as well as the heat energy. The chafing dish, the coffee percolator, the corn popper, the toaster, the small gird, the shaving mug, the milk warmer and the small water heater can be used economically in this way.

MEDFORD'S FREE LIBRARY.

(Continued from Page 17.)

The present library board, composed to Mayor Canon, J. R. Allen, W. I. Vawter, Ed Andrews, J. E. Watt, Mrs. B. P. Theiss, F. E. Merrick, P. J. Neff and F. H. Hollis, have worked conscientiously to raise the tone of the reading public, and have given special attention to juvenile books. The board realizes that the boys in their casual reading find some particular branch of study, in science, mechanics, art, etc., which arouses a sleeping instinct. Therefore, to meet an ever increasing demand, many books have been purchased, treating of X-ray, electricity, wireless telegraphy, aeronautics, care of animals, etc. Who can predict but what Fultons, Marconis and Bells may be developed from the impetus given by these juvenile books of the Medford library? For reference work the library contains many excellent books on agriculture, horticulture, api-culture, mining, arts and crafts, biography, travel. Many sets of standard fiction also delight the book-worm.

As demonstration of the marvelous increase of our library activities, note the following facts: The number of books two years ago on the library shelves was 700, now the number comprising our library is 1,115 The average monthly circulation was formerly 400, now it is 900. The number of patrons has increased in proportion from 450 to 1,290. Thus from such small beginnings, along its strenuous up-hill course, the history of the library may be traced; and its sturdy supporters, the Greater Medford club, and the library boards, are to be congratulated by Medford's appreciative citizens for their courage, energy and public spirit.

A HAPPY, HAPPY DAY.

(Continued from Page 17.)

While the ladies would doubtless have felt disappointed had the president of the United States been assassinated or Colonel Roosevelt suddenly ended his hunt through Europe, thus throwing out their carefully prepared news, still the instinct that just round the corner law a story provided stimulus to the day's work.

And how they did work—those girls and the fair matrons in charge of them! To be sure, they went to unusual sources for information and were sometimes at a loss how to question, but that often enabled them to secure some unexpected bit of news. Certain regular "beats" must be done every day—the postoffice, the city recorder's office, the mayor's office, the railroad offices, the principal industrial enterprises, the hotels, the theaters—and how Mrs. Stoddard, at the city desk, did comb all available sources for "dope!"

Nobody thought, even though it had been repeatedly announced, that the women would take charge of the telegraphic desk, but Miss Janney, with Mrs. Neff and Mrs. Parsons to assist her, showed rare discrimination in the selection of what to print.

Said one purveyor of ice cream and soft drinks: "No news today, girls, but you can sit down and have all the ice cream you want."

The society editor has another chance at the young Jackanapes who, when solicited for a professional card, passed himself off for the janitor of the building.

In spite of interruptions, confusion and problems of all sorts, the paper was put through and when the forms closed at 3 o'clock this morning the ladies voted it one of the busiest and altogether delightful days of their lives.

A SUCCESSFUL CLUB.

(Continued from Page 17.)

Who in Public Life Are the Abraham Lincolns of Today? by Mrs. U. G. Smith.

Southern Writers of Today, by Mrs. E. B. Pickel.

Statesmen of the Revolution, by Mrs. F. E. Merrick.

An Hour With Whitman, by Mrs. T. Hollis.

Review of the Virginian, by Mrs. F. E. Page.

Men and Women Writers of America, by Mrs. E. N. Warner.

Home Influence vs. School Environment, by Prof. U. G. Smith.

Can Twentieth Century Women Fill Men's Places? by Mrs. H. Stoddard.

The Women Without a Club, by Mrs. H. Gale.

Glimpses by the Wayside, by Mr. W. I. Vawter.

Science vs. Drudgery in Housekeeping, by Miss McDermott.

Rights of Women in Oregon, by Attorney P. J. Neff.

Public Welfare and Individual Rights, by Hon. W. I. Vawter.

The Dramatic Art of Shakespeare, by Judge William Colvig.

City vs. Suburban Life, by Mrs. Stokes.

The afternoons have proven thoroughly enjoyable and the programs prepared very very entertaining and instructive.