Domestic Economy in Public Education 1889

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# DOMESTIC ECONOMY

AS A

# FACTOR IN PUBLIC EDUCATION

BY

MRS. ELLEN H. RICHARDS,
Instructor in Sanitary Chemistry, Massachusetts Institute of Technology.

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JULY, 1889.

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# Domestic Economy as a Factor in Public Education.

The Public School of the American Commonwealth is a somewhat unique development in the educational institutions of the human race. Founded for all the children of the community, supported by the public funds in order to secure a constant succession of good citizens, that the state might be sure of being sustained, the school taught those subjects which were thought to best prepare for citizenship, the schoolmaster was to supplement, not supplant home training. With this common aim, the children of those who ploughed in the fields were sent to sit at the same desk as the children of those who were the intellectual leaders of the community. The equality of mind thus recognized was typical of the spirit of the early commonwealth. At a time when every man could load a gun, build a log house or a palisade, and every woman could spin and weave the cloth from which she fashioned the garments of her family, there was little need of manual training or domestic economy. It was the highest ambition to have the children furnished with the intellectual weapons which would enable them to take, in due time, a leading place in the community. Thus the public school was a factor, next to the "meeting," in the elevation of the people. Grown men and women used the few weeks of winter when work was less pressing, for an intellectual advancement which was always recognized as fitting them for public duties, giving to them better language for the

town meetings, more skill in debate, a reputation for quickness at figures. This was the condition of affairs only forty years ago, in the home of the public school, the commonwealth of Massachusetts. But the first act of the general court in 1642, not only enjoined upon the municipal authorities the duty of seeing that every child was educated so as to read and write, but also that "all parents and masters do bring up their children and apprentices in some honest, lawful calling, labor, or employment, either in husbandry or some other trade profitable for themselves and the commonwealth." As Horace Mann so well stated the bearing of this early law: "Thus were recognized and embodied in a public statute the highest principles of political economy and of social well-being—the universal education of children and the prevention of drones or non-producers among men."

The aim of education is now what it was then, to make good citizens, and those subjects which will best conduce to this end should be taught in the public school.

Times change and methods must change with circumstances. People no longer travel by stage coach, why should children be taught in the school just what their stage-coach travelling grandfathers were taught? The citizens of the future are now in the schools. They are in just that stage of development in which they can most readily imbibe higher ideals of life and be influenced to better ways of living: shall the best thought of the time be withheld from them for fear that they shall know more than their fathers or that they shall become too revolutionary in their homes?

In no branch of knowledge has there been greater advance in the last fifty years than in that of public health. In no department of science can so much be accomplished for the general good with so little expenditure as in teaching the elements of sanitary science.

It is no longer considered as necessary for a child to

have measles and scarlet fever as to cut its teeth. It is no longer considered an essential part of life to have at least twenty or thirty days of illness in the year, but the community is beginning to learn that health and happiness are within reach of all who know and obey the laws of right living. Health and happiness mean competence and peace in the community. Good house-keeping and good cooking have the greatest influence on these factors in a nation's prosperity.

The necessity of teaching something of sanitary law is recognized in the wide spread endeavor to introduce lessons on hygiene and temperance into public schools. But the attempt to teach topics insulated from their proper connections is oftentimes not only futile but disastrous. In these lessons harm instead of good not infrequently results from ignorance of the real bearing of science as well as from over-zealous partizanship. Hygiene and temperance with a good ground connection in a course in domestic economy may safely receive the shock given by the most enthusiastic teacher.

The elementary science lessons now given in so many schools form an admirable and sufficient ground work for the consideration of the effect of foul air and dust on health.

The present plea is for a connected and systematic course in general science which should be given to both boys and girls as a preparation for the practice work or manual training which is now so generally conceded to be an essential concomitant of an education, as is shown by the establishment of schools where boys may gain control of all their faculties and thus become well balanced men. It is quite time to consider what can best effect the same result in the same degree for girls.

The subject chosen must be broadly educational and at the same time capable of manual demonstration. It must be universally applicable to all conditions of life. The

writer has no hesitation in saying that the science of domestic economy rightly interpreted fulfills all of these conditions. And here, as in all manual training, the science, or educational element, should be distinguished from the art.

While sympathizing heartily in the work of the cooking schools so successfully established, the writer sees the same element of danger lest they should be considered as an end instead of a means, as has been the case in the schools of carpentry. In a word they should "not teach how to make a living but how to live." To do this effectually the foundation should be broadened; just as the course in carpentry has developed into the manual training school, so should the eminently successful cooking school develop into a course in domestic economy. All the work of the school should be in harmony and the cooking should no longer be considered an outside affair, an interloper, a crowder out of more important studies but all the teachers should coöperate to make most effective the practical lessons.

The topics required are all taught in some fashion in most schools, so that this plea is not for the introduction of new subject matter but for the simplifying and correlation of what is now attempted so that the result may be a valuable educational development mentally and morally instead of a useless hodge-podge of isolated facts with no effect in the after lives of the pupils.

The attempt to introduce new subjects into an existing curriculum is often like setting up with great labor disconnected posts which enclose nothing and support nothing, instead of building upon a foundation a complete and useful structure. In education each step should follow closely upon the previous one and the connection between all the branches of a subject should be clearly apparent to the pupil's mind.

What then is a feasible plan for a course in Domestic

Economy applicable to public school work? The teacher must bear in mind that the word economy as here used is not synonymous with parsimony. Better living, better health in consequence of better cooking, means economy to the state in the general capacity of its citizens; brain workers quite as much as day laborers.

The lessons in Domestic Economy should extend over four years from the ages of ten to fourteen or from twelve to sixteen. The writer prefers the younger limit.

1st year :—Observations on the growth of plants and animals, in the school-room.
Sewing and knitting.
Two hours a week of elementary science lessons.
The study of oxygen, hydrogen and carbon and their relation to the life of plants and animals.

2nd year :—Continued observation of plants and animals.
Collection of seeds, and fibres, and woods in connection with geographical study.
Sewing, cutting, and fitting.
Two hours a week of elementary science lessons.
Simple mechanism.
Oxygen and carbon in their relation to fire and heat.
Elementary Physiology.

3rd year :—Completion of the museum of materials used in the house, with reading lessons and geographical classification.
One hour a week of elementary science, composition of food, starch, sugar &c.
Two hours a week in the school kitchen. Practical lessons in the care of the fire and the cleaning and cooking of natural products, seeds, roots, and fruits. Simple applications of the laws of heat which have been learned before. Especial attention is to be given at this point to cleanliness, to orderly and systematic arrangement.

One hour a week at this point should be given lessons on personal hygiene, temperance in eating as well as in drinking.

4th year :—Collection of materials used in cleaning and repairing ; soaps ; substances used in taking out spots and stains—sewing materials—examples of skilled repairing.

One hour a week of science lessons, on the composition and cost of food materials, and the preparation of dietaries for different seasons of the year.

Two hours a week in the school kitchen, beginning with the natural products prepared by the younger class; the lessons should be devoted to combining them into the more complicated dishes. The cooking of meats, preparation of soups and stews, the making of bread and breakfast and tea cakes; made over dishes.

Suitable combination, seasonable marketing with appetizing serving, should follow.

One hour a week, family hygiene and the care of the house.

The course here outlined will in all require only one-fifth of the school time, and surely it is of one-fifth the value of the sum total of education.

The plan proposed is no visionary one, but lest some reader should still be skeptical about the desirability of the manual or practice work and the introduction of so much science into the school kitchen, we will consider the question more in detail.

The use of tools is acknowledged to be almost a distinguishing attribute of civilized man, that thing which distinguishes him from the savage, and the advocates of manual training often say that there is no reason why girls should not use tools as well as boys. But as a rule the needle is still held to be the tool of the woman as it was in

the days of bead ornamentation and tapestry working. The use of tools is also recommended because of its value in developing the muscles, in making a part of physical training.

Will any one venture to recommend the position of the seamstress at her work as hygienic? as calculated to develop all parts of the body? as tending to an erect carriage or a firm step? However valuable the use of the needle may be as an art, it cannot claim to be ranked very high as a factor in education.

The preparation for needlework, the science of cutting and fitting, is properly a branch of drawing and geometrical application, and as such is rightly considered within the scope of the school, but even that is of limited value in increasing physical and mental growth.

The workshop as arranged in the best schools for manual training, leaves little to be desired in the way of the best exercise for all the muscles; watch a boy at the bench and see how in the progress of his work every muscle from head to foot is called into play and with this advantage over the gymnasium, that it is all unconsiously done, the boy's mind being on his work. The mental stimulus which the boy receives from the workshop has been abundantly proven.

What can take the place of the workshop in the education of girls? Educators are every where clamoring for physical education for girls as a necessity, and yet no general effort has been made to give the girls a chance at the work-bench, although some schools have done so. It is an additional expense for one thing and since after all, the school is utilitarian to a certain extent, that subject which is useful as well as educational will find a readier foothold.

But along with the use of tools in the development of civilized man came another advance, as marked, and not less important, i. e. the cooking of food. In all the march

of civilization the two have gone hand in hand. The savage woman built the house as well as cooked the food. Man has taken the building off her hands, but the cooking still remains her province. What training does she receive for this most important office, an office not less important to the welfare of the community than the use of tools?

Can cooking, the use of kitchen tools, be placed on a level with the use of workshop tools, as a means of mental and physical training? Let the skeptic go into one of the school kitchens and see the girls standing at their benches, with the measuring cup and scales, instead of a foot rule, with the moulding board and rolling pin instead of the plane, the dough for a loaf of bread instead of a piece of pine board, their hands the most effective tool of all. Let him watch their graceful unstudied motions as they tidy up the desk while the prepared dish is cooking; let him note their bright faces as the soup is tasted, and then tell whether there is no value in the work as a physical development and a mental exercise in judgment, exactness and neatness, if the "executive faculty, the most important of all our powers in the practical work of life" is not called into play by the bringing of the preparation of materials and cooking within the specified time?

As, in the case of the workshop, after the fundamental principles are learned, the pupil has the satisfaction of making a table or a chest of drawers, in order that he may more clearly see the bearing of each separate process, so the girl prepares a set of dishes, as a tangible evidence that she has understood the principles involved, not merely for the sake of making the dish.

Consider for a moment the scientific principles which are called into play in the preparation of so simple a dish as a steamed pudding. First a fire is built. The kindling point of coal is at so high a temperature that the heat of a match is not sufficient to ignite it, therefore some wood is

first set on fire. But this cannot be lighted by the heat of a match unless it is in shavings or fine splinters which will in their turn give heat enough to set on fire the larger pieces, and this will heat the coal so that it will burn. None of these substances will burn unless they have sufficient oxygen to combine with the carbon and hydrogen which they contain. If they do not burn there will be no heat, hence the amount of air which passes through the wood and coal must be regulated by the drafts of the receptacle in which the combustion is going on, i. e. the stove. Too much air will carry the heat produced by the union of the oxygen and carbon and hydrogen up the chimney. After a fire is well started, steam to cook the pudding is required. A pan of water is set over the fire, and by means of the conducting power of the metal of which the pan is made the water is heated. First little bubbles of air are so expanded by the heat as to rise to the surface and escape; then some of the water nearest the metal is so heated that it becomes gaseous and rises in large bubbles to the top where the bubbles are cooled to water again, and seen to disappear. Soon however the top becomes heated by these bubbles of steam so that they escape as steam carrying with them the heat which was required to form them; this heat is given up to any cooler substance with which the steam comes in contact and so it becomes heated. While the water is coming to this temperature, the dough is to be prepared. Wheat flour is used, because it contains all the substances which are needed for the nutrition of the human body. Starch and some fat to be combined with oxygen in the tissues to furnish the heat needed to keep the body from ten to one hundred degrees warmer than the outside air, according to the season, and to furnish some of the tissues with food which they need. Flour also contains gluten and some other nitrogenous substances which not only enable the cakes made from flour to become light, i. e. porous, because of its glutinous character,

but also to furnish nitrogenous material for the repair of the muscular tissues and probably to fulfil some other as yet unknown office in the economy of the human body.

The flour being good for food in itself must be made digestible and palatable, the three requisites in any food. Flour being dry must be moistened, therefore water is added in just such quantity as will be taken up by the starch grains and swell them but not allow them to become pasty. But the saliva must penetrate every particle of starch with its change-producing ferment, and while savage man ate parched grain, chewing it a long time, civilized man prefers a quicker method and so makes the mass of cooked flour porous with the aid of carbonic acid gas introduced either by the use of a ferment yeast, or more quickly by a chemical preparation of baking powder. When the batter is heated all through to the boiling point of water, 212° F, the gluten is stiffened so that the mass is elastic, the starch has taken up the water and become dry. The pudding has now to be taken out and served with some flavored sauce.

The school girl who has had the elements of chemistry and physics which are often taught as abstract subjects, summed up and applied to the making of a simple dish, has had her mind awakened to the relations and interdependence of things, as no other training now given can awaken it.

The objector may say that a pudding made by practiced hands is just as good as one made by the hands which are actuated by all this brain knowledge. It is quite true, but the advocates of manual training as a factor in education turn their eyes first of all and chiefly, to the effect on the child (not to the results as shown in the work accomplished, for the sake of results only) for the proof that the training has been successful in that which it aimed to accomplish, namely a result on the mind of the child.

Often the most effective lessons are those which are

indirectly learned. Thus not the least of the many values of the training in the cooking school is the indirect one of neatness, cleanliness, and promptness.

This effect cannot be better expressed than it has been by a master in science. "A fact discovered by a child for himself through his own direct observation becomes a part of his being, and is infinitely more to him than the same fact learned by hearsay or acquired from a lesson book. The idea of discovery should be encouraged in every way among children. We should remember that to them the whole of nature is an unknown world into which their young souls, timidly or adventurously as the case may be, advance. If we can help them to push forward boldly and see things for themselves we do them an inestimable service, not only adding to the joy of their childhood but kindling for them a light that will illumine them all their future life."[1]

The training has been so far tried in two different places in the curriculum, in the grammar school and in the high school. At present, I am unhesitatingly in favor of beginning at the earlier date. The age of ten or twelve is my own preference, for several reasons.

First:—The child of ten or twelve is still observant, even if she has been so unfortunate as to miss the early training of the kindergarten. She is still retentive in memory, without effort, especially in regard to things which she sees and handles herself.

Second:—The experience so far gained has shown that, as a rule, the younger children (twelve to fourteen years of age) very readily appreciate and very deftly perform the house-keeping part of the lesson. They wash the dishes and put them in place with a zest which is wanting in the case of the older girls.

Third:—At twelve she needs pleasant bodily occupation rather than prolonged mental work.

[1] The Teaching of Geography, Archibald Geikie, page 8.

Fourth:—She needs a mental distraction, an interest outside herself, an interest in things and an illustration of the power of mind over matter; a control of the forces of nature. An inquiry into the reasons of things is of great benefit to the growing girl. At an age when dolls begin to be thrown aside, let the child begin her preparation for womanhood by practicing that most fascinating of all rainy day plays, playing cook, but under the eyes of the judicious teacher.

The work to be laid out in the school kitchen corresponds very well with the course in the workshop.

First the preparation and the clearing away, the care of the fire, the tidy ways of the kitchen, in short, the house-keeping part. Then the construction of single parts, simple boiling, broiling, and baking. Finally the preparation of a whole and its orderly arrangement, mixing, flavoring and combining of dishes. Whether these three parts shall all be combined into one course, or whether there shall be two or three separate courses extending over as many years at less frequent intervals depends upon circumstances. For the elementary instruction in the grammar school two years at least are needed for the best development of the science. It would then seem wiser to follow the natural order and arrange for the younger children to take that most essential part of the lessons, the housekeeping part, either as a morning lesson, preparing the materials for the afternoon class to combine into dishes, or a certain number of them to serve at the same time that the other lesson is taking place.

The first plan would seem to be preferable, since all confusion should be avoided and all distraction of the mind from the work in hand. Also there should always be time allowed for the full performance of the work, for, as in all science teaching, the child should never be told what is to happen. She should see for herself what will take place under given conditions.

When however one teacher has to oversee two sets of workers a loss of power is unavoidable. Two teachers, one for each class of workers would of course solve the difficulty. In any case care must be taken not to crowd too much into a single lesson and especial care must be taken to have each lesson a preparation for the next, that there may be a clear and orderly progression from beginning to end. There is a limit to the absorbing powers of a child's mind.

If however the lessons on domestic economy are delayed until the pupils are in the high school, the first endeavor must be to bring into line whatever of science training they have had ; their interest must be awakened in the applications of the laws they have learned in their school laboratories. For them the school kitchen is only another kind of chemical laboratory. They should be already familiar with the use of the thermometer and with the properties of starch and sugar so that they may at once begin the preparation of food and the study of its composition. In case of a possibility of a three years course in the high school the third year should give an opportunity for the class to combine the foods prepared by the other classes into a suitable dinner with the refinements of service, and with careful calculations as to cost of materials and of preparation.

So little attention has been paid to the science of cooking there is a wide field here for original work.

In all this discussion the reader will bear in mind that the standpoint is that of the public school, and the aim is an educational one throughout, just as much as if the topic under consideration were the teaching of Arithmetic or Geometry. It is the development of the child in character, in mental ability, in more strength by means of the training advocated. It is not the production of a skilled class of workers in one line.

This distinction should be borne in mind constantly, be-

cause there are trade schools in cookery just as there are trade schools in carpentry and metal working. Both are admirable for certain purposes, such as giving free instruction to the children of the poor or affording an opportunity to those who wish to make a better living; or offering advantages to grown people to improve their condition, or opportunities to acquire useful knowledge.

It has been very difficult to prevent the two forces of philanthropy and education from collision over this matter, and at the risk of being tedious the writer must emphasize the distinction again as a reason for the comprehensiveness of the course on domestic economy which at first sight may seem to be absurdly extended so as to cover all the sciences. But where do all the sciences meet if not in the home, the centre of all activity, the pivot about which revolves comfort, health and happiness, or sickness, poverty, and heartache? Upon the education of the American school girl depends the future of the American home.

The science of home life should keep pace with the improvements in outside affairs. At a time when all the food products of the world may be found in the markets of any city and when electric lighting and steam heating are common in dwellings, the housekeeper needs a correspondingly broadened education.

At present it will be difficult to find teachers fully equipped for carrying out the ideal course in domestic economy, but the demand will bring the supply.

Colleges and scientific schools are waking up to the needs of the time, and courses in physiology, hygiene, and sanitary science are being established with reference to the requirements of such teaching.

# APPENDIX.

## NEW JERSEY STATE BOARD OF EDUCATION.

[Extract from the report of the Special Committee on Manual Training, submitted February 7, 1889.]

COOKING.—Instruction in cooking may be begun in the lowest grammar grade. Instruction in cooking should be connected as much as possible with instruction in other subjects. In schools where natural science is taught a particularly close connection can be established.

The instruction begins with the making and care of fires and the chemistry of combustion; then proceeds to the principles and practice of food preparation, by boiling, broiling, stewing, roasting, etc. The class room work should include talks on the chemistry of foods, the relative nutritive power of various foods, and questions of food economy, etc.

The instruction should be given twice a week, in lessons an hour in length, throughout the grammar grade. A room must be set apart and fitted up for this instruction. A class of twenty can be easily instructed at one time, and the cost of equipment for such a class is about $80.00. The materials used will cost on an average $1.00 per lesson.

## BOSTON, MASS.

The School Committee having voted to permit girls of certain schools to attend the schools of cookery established in North Bennet Street and Tennyson Street, provided that the parents or guardians of the pupils so request in

writing, it was decided that such pupils should attend the cookery schools on probation and under certain regulations prescribed by the Committee on Manual Training School. Among these regulations are the following:

General direction of. These schools shall be under the general direction of the Committee on Manual Training School so far as the attendance of classes from the public schools is concerned.

Sessions. The morning sessions of the schools of cookery shall begin at a quarter-past nine o'clock and close at twelve o'clock; the afternoon sessions shall begin at two o'clock and close at four o'clock.

Number of pupils to a class. Fifteen pupils shall be the standard number to one class. The classes will alternate morning and afternoon sessions.

Discipline. The discipline of the Boston School Kitchen No. 1, shall be under the direction of the principal of the Winthrop District; and the discipline of the North Bennet-Street School shall be under the direction of the principal of the Hancock District. Any disorderly conduct on the part of pupils shall be reported to the principals of the schools from which such pupils come.

Disorderly conduct.

Absence of pupils. The absence of pupils shall be reported to the principals of the schools from which they come, and shall be recorded as absences from the regular classes of the grammar schools to which such pupils belong.

Tardiness of pupils. The tardiness of pupils shall be reported to the principals of the schools from which they come.

Class-rolls. Each principal shall send to the teachers of the schools of cookery, class-rolls containing

the names, ages, and residences of the pupils in each class sent from his school.

Qualification of pupils.

Pupils attending the schools of cookery must have sufficient intelligence to keep a recipe-book.

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## NEW HAVEN, CONNECTICUT.

[Extract from the report of Superintendent S. T. Dutton for 1888.]

COOKING.—When one year ago it was suggested that the Board add instruction for girls in Domestic Ecomony, it seemed hardly possible that a public sentiment would be developed sufficiently strong to secure the necessary action. But such has been the case, and Miss Emma Polson, who has taught classes the past year with marked success at the rooms of the Young Women's Christian Association, has been secured as instructor. The ladies of the above named Association having tendered the use of the rooms at a nominal rent, the Board voted to try the experiment there, and appropriated $1,000 for that purpose. Classes of girls will attend one-half day each week from the ten grammar schools in the same manner as the boys attend the Manual Training School.

These several forms of industrial education may all be considered as valuable in two ways, (1) for *mental discipline*, (2) for *practical utility*. While it might be difficult to justify them for the latter reason, it is the prevalent opinion that they can be defended on educational grounds. That wood-working, sewing and cooking are of immense practical importance is certainly no argument *against* their adoption as an integral part of a school training.

It may be admitted that during one period in the history of schools it was permitted to teach anything but what was immediately useful. That time has passed. It is now conceded that if the useful arts can be taught so systematically as to train and discipline the highest powers

of mind and character, there is no sound reason for neglecting them. It is moreover agreed that the best interests of human society and the welfare of the State as related to thrift, industry and morality require that something be done in the schools to establish good habits and stimulate the domestic virtues. During the past year the cities of Boston, Springfield, New York, Philadelphia, Baltimore and Washington have made rapid progress in providing facilities for instruction in Manual Arts. In countries abroad, still more complete and thorough provision is being made in this line. England, Belgium and France have taken important steps toward giving an industrial character to public education. These facts are straws to indicate the drift of public opinion. Is it not possible that we still have much to learn and much to accomplish before we have a perfect and complete school system?

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## NEW YORK CITY.

[Extract from a report on "Manual Training in the Common Schools," submitted to the Board of Education, by the Committee on the Course of Study and School Books, June 29, 1887.]

*Resolved*, That in the Girls' Grammar Schools, cooking should be taught in the Third and Second Grades.

*Resolved*, That the instruction in cooking should be under the direction of special teachers, who should be licensed, employed and paid in the manner now provided for special teachers.

*A*. Estimate of expense (not including salaries of new teachers or expense of supervision) of introducing manual training, as recommended, into all the schools, and maintenance the first year:

| | | | |
|---|---|---|---|
| Kitchen outfit, | $200 per Dept., | 60 Depts., | 12,000 00 |
| Kitchen supplies, | 100 " " | 60 " | 6,000 00 |

*B*. Estimated expense, (not including salaries of new

teachers or expense of supervision) of maintenance of manual training in all the schools in the next succeeding years:

| | |
|---|---|
| Kitchen, 10 per cent of outfit, | $1,200 00 |
| Kitchen supplies, | 6,000 00 |

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## NEW YORK COLLEGE FOR THE TRAINING OF TEACHERS.

[Extract from Circular of Information for 1889].

### DEPARTMENT OF DOMESTIC ECONOMY.

The instruction in this department includes Cooking and Sewing. The Primary objects of the Cooking Course are to stimulate investigation, to develop the power of accurate observation, and to lead the pupils to put to practical use in the preparation of food their knowledge of the natural sciences. Throughout the entire course the students are instructed in the Chemistry of Cooking and Food Nutrition, by means of lectures illustrated by charts and a food-museum. There is also a prescribed course of reading, and lectures on Domestic Economy, including all matters relating to the care and hygiene of the household. There are no demonstration lessons, the work in the cooking laboratory being entirely practical. The course of study includes ten lessons on each of the following subjects: the principles of cooking with practical illustrations, plain cooking, preparation of fancy dishes, cooking for the sick, and a course of lessons intended to teach the most economical methods of choosing and preparing food. This course occupies four periods a week during the senior year.

#### MODEL SCHOOL.

GRAMMAR GRADE.—Cooking is begun in this grade, and includes some information regarding the chemical composition and relative nutritive power of various foods; combustion and the making of a fire; measuring materi-

als and the elements of cookery; the application of this knowledge in the making of bread, soups, biscuits, tea, coffee, etc., and in the proper methods of preparing fish, meats and vegetables for use as food.

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## INSTITUTE OF TECHNOLOGY, BOSTON, MASS.

Instruction of great value is given in Sanitary Chemistry in a course which consists mainly of laboratory work. A special laboratory has been equipped for the purpose. For all who choose to pursue the subject, a minimum amount of work is laid out, consisting of a study of the methods in common use for the Chemical Examination of air and water, of milk and of butter. Subsequently opportunity is afforded for the critical study of other methods of analysis, for the examination of other articles of food, and for the investigation of a variety of sanitary problems in which chemical questions are involved.

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## VILLE de PARIS.

### ÉCOLES PRIMAIRES COMMUNALES DE FILLES.

### ÉCONOMIE DOMESTIQUE ET HYGIÈNE.

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#### COURS SUPÉRIEUR.

Une leçon de trois quarts d'heure par semaine pendant laquelle les élèves pourront, tout en écoutant le professeur, se livrer à des travaux de couture.

### PREMIER TRIMESTRE.

| ÉCONOMIE DOMESTIQUE. | HYGIÈNE. |
|---|---|
| Definition de l'économie domestique. | Définition de l'hygiène. |
| | Hygiène de l'habitation. |

Devoirs d'une maîtresse de maison.

Qualitiés d'une bonne ménagère : ordre, économie, propreté, vigilance, etc.

Budget.

Comptabilité du ménage : carnet journalier, balance, équilibre du budget.

Inventaire du mobilier.

Loyer, Impôts. Engagement de location ; bail, congé.

Choix de l'habitation ; exposition, salubritè.

Ventilation, aèration.

Entretien de l'habitation et du mobilier au point de vue sanitaire.

## DEUXIÈME TRIMESTRE.

Mobilier de l'appartement; choix et entretien.

Distribution du travail de la ménagère.

Travaux d'entretien par jour, par semaine, par saison, etc.

Conseils sur la manière de faire un lit, de balayer, d' épousseter, etc.

Meubles et ustensiles de cuisine, différantes espèces de fourneaux.

Allumage des feux.

Entretien et allumage des lampes.

Entretien des ustensiles de cuisine, de la vaisselle, etc.

*Combustible.*—Donner les indications économiques sur

Chauffage et éclairage au point de vue de l'hygiène.

Aération des locaux pourvus d'un appareil de chauffage.

Dangers des poêles dans les chambres à coucher, précautions à prendre.

Propriétés des différantes espèces de combustibles, de leur influence sur l'appareil respiratoire.

Divers modes d'éclairage.

Des précautions à prendre dans l'emploi des lampes à essences minérales, des appareils à gay, etc.

Influence de l'éclairage sur la vue. Hygiène de la vue.

les différantes sortes de combustible, sur leur emploi.

*De la Cave.*—Exposition, aménagemént, soins à donner au vin, conservation.

## TROISIÈME TRIMESTRE.

Choix et entretien du linge et des vêtements.

Matérial nécessaire aux travaux de couture.

Emploi de la machine à coudre.

Confection du linge et des vêtements.

Raccomodages divers: reprisage, rapiéçage, etc.

*Blanchissage.*—Matériel nécesssaire au blanchissage et au repassage. Des différants modes de blanchissage, lessive, savonnage.

Conseils pour laver le linge, le plier, le repasser.

Des différantes sortes de taches et de la manière de les enlever.

Hygiène du vêtement.

Propriétés diverses des tissuê: soie, lainè, coton, toile, etc.

Couleurs des vêtements, leur influence.

De la forme des vêtementê au point de vue de l'hygiène.

Propreté du linge et des vêtements, son influence sur la santé.

Le professeur rendra aisément cette leçon attrayante: elle doit reposer l'élève des études plus difficiles et plus abstraites qui exigent un effort soutenu de l'esprit. L'économie domestique est en quelque sorte la relation journalière des occupations de la femme dans son ménage. Presque toutes les jeunes filles reconnaîtront dans ces leçons les principes qu'elles voient appliquer chaque jour dans leur famille; mais sur lesquels il faut insister pour les

leur faire observer. Rien n'est nouveau, par conséquent rien ne sera difficile pour elles dans cette science toute féminine qui paraît si naturelle à la femme qu'on s'étonnerait presque de devoir la lui enseigner.

Nous conseillons au professeur d'accompagner ses leçons d'exemples pris dans la vie usuelle et de parler aux yeux des élèves au moyen de dessins exécutés sur le tableau noir.

## COURS COMPLÉMENTAIRES.

Une leçon de une heure et demie par semaine.

### PREMIER TRIMESTRE.

ÉCONOMIE DOMESTIQUE.

Revision des matières etudiées pendant l'année précédente au cours superieur.

HYGIÈNE.

Revision des matières etudiées pendant l'année précédante au cours superieur.

### DEUXIÈME TRIMESTRE.

*Alimentation.*

Viandes de Boucherie.
Volaille, gibier, poisson, lait, beurre oeufs.
} Choix et qualite.

*Boissons.*—Vin, bière, cidre, eau potable.

*Principes élémentaires de la cuisine.* Pot-au-feu, ròti, sauces et assaisonneménts, cuisson des légumes.

*Provisions du ménage.*

Beurre, oeufs, huiles, etc ; confitures et conserves.

Conservation des légumes et des fruits.

Hygiène de l'alimentation.

Propriétés nutritives des aliments, leur digestibilité.

Boissons ; alcools.—De la sobriété.

De l'usage des fruits. Précautions à prendre en cas d'épidémie.

Danger des fruits verts.

Falsification des aliments.

## TROISIÈME TRIMESTRE.

*Du jardinage.* Son utilité et son agrèment.

De l'utilité des engrais.

*Distribution du jardin.* Culture des arbrés, des légumes, et des fleurs.

Le Jardin médicinal.

*Savoir vivre.* Des lettres officielles, pétitions, etc.

Conseils pour quelques cérémonies.

*Hygiene du corps.*—Ablutions, bains, soins de proprété.

Sommeil, exercise, repos.

Préparation de tisanes et de quelques médicaments.

Petite pharmacie du ménage.

Precautions à prendre en cas d' epidémies.

Vaccination et revaccination.

Maladies et accidents.

Soins à donner aux maladies et aux convalescents.

Dans ces leçons théoriques d'économie domestique, le professeur devra faire intervenir les élèves qui sont exercées à tour de rôle à l'enseignment pratique du ménage (chaque jeudi, par série de dix pour la cuisine, et dix pour le blanchissage et repassage). Il leur demandera d'expliquer à haute voix, à leurs compagnes, les opérations de cuisine et de blanchissage auxquelles elles auront pris part dans la leçon précédente. Cet exercice aura le double but d'habituer les élèves à s'expliquer clairement sur des questions simples et faciles, en même temps qu'il les forcera à prêter plus d'attention à des opèrations qu'elles s'attendront à décrire devant toute une classe.

## COURS D' APPLICATION.

### CUISINE—NETTOYAGES—BLANCHISSAGE.

Ces cours ont pour but de compléter par des exercices

pratiques les notions théoriques donneés aux jeunes filles dans le cours d'économie domestique, de leur en montrer l'application et de leur donner le goût, sinon le science complète du menage, si nécessaire à toutes les femmes. A l'aide de ces leçons et des principes qu'elles y auront puisés, elles pourront rendre des services dans leur famille et perfectionner par l'experience et par la pratique les premières connaissances qu'elles auront acquises.

Les cour d'application ont lieu le jeudi, de huit heures et demie à deux heures, du 1er octobre au 1er juin dans toutes les écoles qui possèdent un cours complémentaire.

DIVISION EN DEUX COURS.—Ils se divisent en deux cours: 1° *L'e cours de cuisine*, confié à une maitresse cuisinière ; 2° *Le cours de blanchissage, repassage, nettoyages, etc.*, confié à une maîtresse blanchisseuse.

Ces deux cours sont dirigés et surveillés par deux des adjointes *chargées du cours complémentaire.*

DURÉE DE CHAQUE SÉRIE DE COURS.—Chacun de ces cours sera suivi par dix élèves environ et comprendra huit leçons. Sa durée est donc de deux mois par série de vingt élèves.

Les élèves des cours de cuisine passeront au cours de blanchissage au bout des deux mois de cours et réciproquement, de façon à prendre part, en quatre mois à tous les exercices du cours de cuisine et du cours de blanchissage. Du 1er octobre au 1er juin, quarante élèves environ devront donc recevoir l'enseignement ménager.

LOCAL.—Le cours de blanchissage et de repassage pourra avoir lieu dans le préau couvert. On y aménagera des tables sur des tréteaux, des planches à repasser, des fourneaux à gaz pour chauffer les fers, des baquets pour laver le linge, une armoire pour renfermer l'outillage. Le matériel volant sera enlevé après chaque leçon.

Il serait à désirer qu'une pièce spéciale fût affectée à l'enseignement de la cuisine. A défaut de cetta pièce, il faudra se contenter de la, cantine de l'école, à condition

que cette cantine soit assez vaste, bien aérée, bien éclairée et en dehors du logement de la concierge. Il sera nécessaire de ménager dans cette cantine une space spécialement réservé aux ustensiles de la cuisine du jeudi, qui ne doivent en aucun cas servir à la cantinière, et d'y placer une armoire fermant à clef pour y serrer la vaisselle et les provisions dé menage.

COURS DE CUISINE.—Le cours de cuisine comprendra l'achat des provisions nécessaires au déjeuner et dont la liste est fixée d'avance par le menu du jour[1], la tenue du carnet de dépenses, la préparation et la cuisson des aliments, la mise du couvert. Toutes ces operations devront être décrites au fur et à mesure de leur exécution. Cette première partie de la leçon durera de huit heures et demie à midi. Les élèves, ainsi que la maîtresse, déjeuneront ensuite et jugeront ellesmêmes de la qualité des mets confectionnés par elles. (Elles apporteront de chez elles leur pain et leur vin.)[2]

Après le déjeuner, tout devra être remis en ordre, la vaisselle lavée, les ustensiles de cuisine nettoyés. Les deux maîtresses adjointes feront chacune pour la section qu'elle aura surveillée un resumé oral des opérations du jour pendant lequel les élèves prendront des notes, qu'elles auront à rédiger pour la leçon suivante en les accompagnant du compte de la dépense et du prix de revient de chaque plat par convive.

On trouvera plus loin huit menus d'été et huit menus d'hiver. On y verra désignés des accommodements de viandes froides tels que : miroton, hachis, croquettes etc. Ces accommodements des restes de la veille sont si nécessaires dans un ménage que l'on ne devra pas s'arrêter à la difficulté qu'ils prèsentent nécessairement dans un cours qui n'a lieu qu'une fois par semaine. Un pot-au-feu, fait le mercredi à la cantine de l'école, permettra de conserver

[1] Trois élèves accompagnées de la maîtresse cuisinière et sous la surveillance d'une maîtresse adjointe iront chaque jendi faire les provisions du jour.

[2] Les dix élèves du cours de blanchissage devront apporter leur dejeuner.

pour le lendemain un mor ceau de boeuf bouilli qui sera accommodé par les élèves de la classe de cuisine.

COURS DE BLANCHISSAGE ET DE NETTOYAGE—L'emploi du temps des cours de blanchissage et de nettoyages, est également réglé pour chaque leçon. La directrice del'école comprendra la nécessité de procurer aux élèves quelques objets mobiliers à nettoyer. Le matériel de l'école en fournira d'ailleurs em certain nombre.

Chavue élève de ce cours apportera les quelques objets de linge qu'elle devra laver et repasser.

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## PURDUE UNIVERSITY, LAFAYETTE, IND.

[*Extract from Annual Catalogue.*]

### SCHOOL OF DOMESTIC ECONOMY,

### 1887–8.

#### FIRST TERM, FRESHMAN YEAR.

| | | |
|---|---|---|
| October | 3. | LECTURE—*Home-Making.* |
| " | 4. | LECTURE—*Our Kitchen Interests.* |
| " | 5. | LECTURE—*The Art of Cooking.* |
| " | 6. | LECTURE—*Bread-Making.* |
| " | 10. | PRACTICE—Bread-Making, including yeast, Ferment, Dough. |
| " | 17. | PRACTICE—Fermentation of Dough, Baking of Dough, Cooking and Care of Bread. |
| " | 24. | PRACTICE—Graham Bread, Fancy Rolls and Twists; German Coffee Cake. |
| " | 31. | LECTURE—*Boiling, Simmering, Stewing.* |
| November | 7. | PRACTICE—Soup Stock, Beef Tea, Plain Soup. |
| " | 14. | PRACTICE—Boiling Meats and Vegetables. |
| " | 21. | PRACTICE—Stewing Meats and Vegetables. |
| " | 28. | LECTURE—*Broiling and Roasting.* |
| December | 5. | PRACTICE—Broiling Meats and Poultry. |
| " | 12. | PRACTICE—Dressing Poultry, Larding. |
| " | 19. | PRACTICE—Dressing Meats and Poultry. |

#### SECOND TERM, SOPHOMORE YEAR.

| | | |
|---|---|---|
| January | 9. | PRACTICE—Making Omelets, and Cooking Eggs. |
| " | 16. | PRACTICE—Cooking Cereals, and Making Coffee, Tea and Chocolate. |

| | | |
|---|---|---|
| January | 23. | LECTURE—*Frying.* |
| " | 30. | PRACTICE—Frying Oysters, Ham, Chicken, Potatoes and Mush. |
| February | 6. | PRACTICE—Baking, Boiling, Frying, and Scolloping Fish. |
| " | 13. | PRACTICE—Making Fruit, Custard, and English Pies. |
| " | 20. | PRACTICE—Making Puddings, and Pudding Sauces. |
| " | 27. | LECTURE—*Mixing and Seasoning.* |
| March | 5. | PRACTICE—Making Chicken, Vegetable, and Fruit Salads. |
| " | 12. | PRACTICE—Making Croquets, Stews, and Hashes. |
| ' | 19. | PRACTICE—Setting Tables, and Serving Food. |

THIRD TERM, JUNIOR YEAR.

| | | |
|---|---|---|
| March | 26. | LECTURE—*Household Management.* |
| April | 2. | PRACTICE—Housework. |
| " | 9. | PRACTICE—Laundry Work. |
| " | 16. | PRACTICE—Selecting Meats and Family Supplies. |
| " | 23. | PRACTICE—Handling Milk and Cream, Making and Taking Care of Butter. |
| " | 30. | PRACTICE—Boning Turkey and Chicken. |
| May | 7. | PRACTICE—Making Cake. |
| " | 14. | PRACTICE—Delicate Desserts. |
| " | 21. | PRACTICE—Making Candy. |
| " | 28. | LECTURE—*Social Etiquette and Usages of Society.* |
| June | 4. | PRACTICE—A High Tea and Sociable. |

This work may be taken by students already in the University, without interfering with their regular course of study.

A Special Course of Instruction will be arranged for those who desire to come to the University and devote their entire time to the study and practice of Domestic Economy. This Special Course will include daily instruction and practice for a term of eleven weeks, commencing January 9th, 1888.

# EDUCATIONAL MONOGRAPHS

Published under the auspices of the NEW YORK COLLEGE FOR THE TRAINING OF TEACHERS, and written by the foremost Educators and Public School Workers both in this country and abroad, furnish a series of papers to teachers on the Educational Questions of the Day. The papers are concise, clear and comprehensive, especial prominence being given to the Manual Training Movement.

Six Monographs appear each year, and the subscription price is fixed at the extremely low price of $1.00 per annum.

The following have already appeared:

I. **A Plea for the Training of the Hand**, by D. C. GILMAN, LL.D., President of Johns Hopkins University.—**Manual Training and the Public School**, by H. H. BELFIELD, Ph.D., Director of the Chicago Manual Training School. 24 pp.

"For the student or teacher who is making a study of manual training this first number of the Educational Monograph Series is the best possible introduction to the subject." —*Science.*

II. **Education in Bavaria**, by SIR PHILIP MAGNUS, Director of the City and Guilds of London Institute.

III. **Physical and Industrial Training of Criminals**, by DR. H. D. WEY, of State Reformatory, Elmira, N. Y.

IV. **Mark Hopkins, Teacher**, by PROF. LEVERETT W. SPRING, of Williams College.

V. **Historical Aspects of Education**, by OSCAR BROWNING, M. A., of King's College, Cambridge.

VI. **The Slöjd in the Service of the School**, by DR. OTTO SALOMON, Director of the Normal School at Nääs, Sweden.

VII.–VIII. **Manual Training in Elementary Schools for Boys**, by PROF. A. SLUYS, of the Normal School, Brussels.

IX. **The Training of Teachers in Austria**, by DR. E. HANNAK, Director of the *Pädagogium* at Vienna.

X. **Domestic Economy in Public Education**, by MRS. ELLEN H. RICHARDS, of Mass. Institute of Technology.

The following are nearly ready:

**The Teaching of History**, by DR. EDWARD CHANNING, of Harvard University.

**Objections to Manual Training**, by COL. FRANCIS W. PARKER, of Cook Co. (Ill.), Normal School.

**Extent of the Manual Training Field**, by PROF. C. M. WOODWARD, of Washington University, St. Louis.

**Graphic Methods in Teaching**, by CHARLES BARNARD, ESQ., of Chautauqua T. C. C.

**Elementary Science in Schools**, by PROF. W. LANT CARPENTER, of London.

**The Jewish Theory of Education**, by PROF. HENRY M. LEIPZIGER, Director of the Hebrew Technical Institute.

Monographs will also be written by PROF. FRIEDRICH PAULSEN, of the University of Berlin; PROF. A. SALICIS, of Paris; PRESIDENT W. P. JOHNSTON, of Tulane University; SUPERINTENDENT JAMES MACALISTER, of Philadelphia; SUPERINTENDENT JOHN E. BRADLEY, of Minneapolis; PROF. RAY GREENE HURLING, of New Bedford, and others.

Leaflets are also issued from time to time, giving information on specific educational topics. The Leaflets are sold for 1 cent each, or sent by mail on receipt of a 2-cent stamp. Superintendents and others ordering a quantity are offered a liberal discount.

The payment of **50 cents** will entitle any person to receive **all the Leaflets** that may be issued for **one year.** They will be sent by mail promptly as issued.

For Monographs or Leaflets, address, enclosing postal note or money order, payable to the New York College for the Training of Teachers. One and two-cent stamps may also be sent.

**Registrar of the College for the Training of Teachers.**

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# DOMESTIC ECONOMY

IN

# PUBLIC EDUCATION

BY

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Instructor in Sanitary Chemistry, Massachusetts Institute of Technology.

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