MANUAL TRAINING. Its Relation to Art.

Address Read by J. H. Tipton, Instructor of Manual Training at U. of U., Before the Arts and Crafts Section of the Utah Teachers' Association at the October Meeting.

The term Manual Training is applied to all handiwork used for educational purposes. Manual training embraces work in paper, cardboard, leather, raffia, rattan, clay, iron, and wood.

Sloyd, which is work in wood, is the most porminent feature of manual training. It has been found that of all the materials used wood best satisfies the educational demands. In a liberal scheme of manual training various materials should be used, for no one material combines all the qualities necessary to the education of the pupil in every stage of development. The material used should be adapted to the work in hand, and the work should be suited to the child.

Manual training has for its primary aim the development of the motor side of the child. It has been ascertained physiologically that no perfect sensory development can take place without a proper exercise and use of the motor side of the individual. And that the child who uses his hands develops faster and better than one who does not. Certain regions of the brain depend for their development upon muscular movement, and if these movements are never made those parts of the brain will be left undeveloped.

Further the natural tendency of the child demands that handiwork be given it. The child delights to examine things, to take them apart, to try to make them; to meet this inborn craving, manual training binds its influence. Too often this tendency when neglected gives rise to what we call mischief. And above all our world is largely a world of machinery, we handle wheels, motors, engines and a thousand and one mechanical contrivances. We live in a mechanical, constructive environment. Education should fit the child to live in this environment. Students may be well versed in the dead languages, in the lore of ancient nations, but they most assuredly should be familiar with the language and the lore of the present—constructiveness.

Manual training teaches the pupil to use his hands and to some extent makes him skillful. The skill engendered is rather that of getting used to oneself than skill in the use of tools, although the latter is not neglected.

As a matter of discipline the child is better served by doing the concrete work of manual training than by working in the abstract subjects.

The subject of manual training has been growing for some time. When it was first introduced into the schools it consisted mostly of set exercises, so many exercies to each model, and so many models to a course. The models were made year after year by the pupils. Each model was made to the exact size, and the shape was rigidly fixed. Many thought that manual training meant mere doing in working in the concrete without any consideration of good form and proportion. After several years of this kind of work educators began to see that this was mere formalism, they began to see that something else was needed.

Art was then introduced into the work of manual training. And although art has been applied with manual training for but a few years, yet during the short time a wonderful change for the better has been wrought so that now in the best practise we do not have sloyd alone, but sloyd modified by art. With the addition of art manual training has become a more powerful factor in education. The expression of beauty in the application of form, line and color to produce useful objects is an important function of manual training. These objects may be made in wood, iron, leather and other materials by means of weaving, basketry, wood carving and work in bent iron. In manual training work there should be discipline, skill in its production, artistic ideas should be engendered, industrial education acquired, and such general training given as will be useful to the pupil in any walk of life. Nothing should be taught that will have to be unlearned, whether it be the driving of a nail, or the fixing of a habit.

The word art has been so frequently used to designate picture making that whenever we hear the word we think of pictorial art only. Perhaps of all the forms of art pictorial is the least useful, yet by some considered the most essential. From the manual training standpoint pictorial art is of little value. Morris says: "Beauty, which is what is meant by art, using that term in its widest sense is, I contend, no mere accident to human life, which people can take or leave as they choose, but a positive necessity of life, if we are to live as nature meant us to."

Drawing, freehand and mechanical, practical design, applied design, and color harmony are divisions of art that directly concern manual training. Of what use is drawing to a child? Drawing teaches him to see accurately, it teaches him form and serves to fix on his mind a clear image of the object. Now if we go a step further and have the child make that which he has drawn, the educational value will be higher.

After the making of the object he will know it. Know it in a way that it would be impossible to know without the actual making. The act of making is the surest way of knowing. We never know an object until we have made it.

Art should be taught as applied art, not as pictorial art only. The teaching of drawing often becomes an abstraction. Drawing to be real must be followed by construction.

If children cannot, through lack of strength or lack of skill, make acceptable objects in wood then they should work out their ideas in material that is easier to handle and which does not require much tool skill, such as raffia, paper, clay, etc. Every piece of work put before a child as a model should be perfect not only from the mechanical side but from the art side also. Children should be taught to make beautiful objects. Not that I mean that the objects must be complicated, highly decorated and fancifully ornamented, but that the objects should be simple in design, exhibiting strength of construction and skillfulness of workmanship.

Far better for educational purposes is it that a pupil can design and make a simple penholder, thoroughly understanding the principles of its constuction, than to cobble some wood together into an unsightly mass. Children should be given work adapted to their capacity, something simple, something that they can do well. To guide the child in the selection of work adapted to it is a function of the teacher. All the work of the pupil should be artistic, simple, strong, useful and beautiful. No work should be done simply for its decoration. It is a fact that children (and older persons) do like to make things which they can highly decorate. The work should be substantial rather than showy.

A well built model needs but little surface decoration. Work should be solid and honest, no patching with putty and smearing with paint to fill and hid defects, no slicking over with sandpaper.

In designing an object for a given purpose the first consideration should be the material to use. Next the general form of the object. Then art steps in and modifies the shape and proportion of the object and converts the merely useful into the beautifully useful.

There can be no art without construction. We cannot separate the two elements, designs and construction without harm.

Design should not be a study of abstract spaces and ways of filling, but should be a part of the model, worked out in it, not on it. Art education is the orderly stimulation by the exercise of the power of perceive and create beauty. The most natural exercise is in beautifying the products of human industry. We are very abstract in our art, we study line harmonies in the form of pencil marks—it would be better to find them in lines of stress and support, in the patterns of weaving, and the curves of bent iron work. In these we get the realities. The pencil marks are the signs of the abstract. We should create in material, not merely on paper. All the lines of an object should utilize, spring from, carry out the structural elements in the uses and forms of the object. The inventive efforts of all nations have sprung from the needs and laws of structure.

Yet a gap has formed between art and structure. From the writings on art a person would be led to think that the painting of landscapes, and the study of the human form comprised the greater part of the work in art. Perspective and anatomy are practically useless to us. The teacher of manual training has no use for those hazy, indistinct drawings which often pass for work of art. And the teacher of art is disturbed by the mechanical precision and stiffness of the work of manual training. From the art teacher we should hear less about art for art's sake. And from the manual training teacher less about set exercises and more about those objects which will fill a need in the life of the child. We should recognize the fact that each is helpful to the other, that very largely each is dependent on the other, and that each does contribute to the rounding out of the child's training, and art is its very life.

Drawing is one-half of manual training.

CLIMBING THE ALPS BY RAIL.

(Continued from page Eleven.)

ble disaster. The passenger cars are pushed, not pulled, and are built for 40 passengers. Each train consists of a locomotive and one car, but at times of exceptional traffic another car may be added.

BOREING TUNNEL.

Not only is electrical energy used for traction purposes, but also for lighting and heating the stations and for working the rock drills in the tunnels. The electric drills can bore a hole three feet deep in 10 minutes. Into these holes dynamite cartridges are dropped, the workers hurry out of the tunnel and down the side of the hill, and the explosive is touched off by means of a long fuse. As the removal of the rock which has been blasted takes considerable time, the mines are fired only three or four times a day. The daily advance is about 13 feet. It will be seen that the completed road must be the work of years. The tunnel will be throughout 13 feet in height and 11 feet in width. Electricity is also used in disposing of part of the debris. With its assistance ice and snow are melted, food is cooked and the workmen's huts are warmed. The time will come when the Italian laborers will be snowbound up in the mountains, and then the electrical conductors connected with a telephone will be their only means of communicating with the lower world.

SEARCHLIGHTS ON SUMMIT.

A still larger generating station than that in the Lauterbrunnen valley will be built in the valley of Grindelwald, and both together will produce power sufficient not only for all the needs of the road, but also for making the most brilliant lighting effects. Two great searchlights of enormous candle power will be placed upon the Jungfrau summit. One of these will be used to bring out the spectacular effect of the mountain scenes, while the other will act as a sort of lighthouse, visible from the cathedrals in Strassburg and Milan.

FIVE STATIONS.

The Jungfrau railroad begins at Scheidigg, 6,770 feet above the sea. This point is reached by the Wengern Alp railroad. There will be five stations on the road besides that at the summit. These stations will be cut out of the rock, and the ceilings will be supported by stone pillars. The stations will have window-like openings from which one may obtain a fine view of the adjacent scenery. Walls, ceilings and floors will be covered with wood. In addition to the apartments of the attendants each station will contain a restaurant and resting rooms, including bedrooms, so that the traveler unable to withstand the abrupt transition from the air of the lower mountain to the rarefied atmosphere of the heights will have a chance to break the journey. The stations at Scheidigg, at the Eiger glacier and at Eigerwand are already done, and at Scheidigg a physician is stationed to determine if passengers are fit to make the ascent.

STUPENDOUS VIEWS.

It is worth while to make the ascent by railroad to Elgerwand, the highest point reached so far. The views along the Wengern Alp road and the partially completed Jungfrau are stupendous. What, then, will be the sensations of the traveler who makes the whole ascent by rail?

ANOTHER DIZZY LINE.

A scarcely less wonderful piece of engineering is the new Albula railroad in the Engadine, opened the 1st of last July and extending from Coire to Cellerina. The line first runs to Tiefenkasten, a distance of about eight miles. In this part there are many crossings over chasms and ravines, and over 80 per cent of the distance is through tunnels. Near Thusis there is a magnificent span of about 250 feet made by a great iron bridge. At this point the railroad makes a steep mount, though one is not conscious of the fact, for the ascent is gradual, and there are high mountains all around. From Tiefenkasten the line passes several beautiful waterfalls. Then it suddenly crosses a viaduct over 400 feet long and 100 feet high. Gradually a further rise of 800 feet is accomplished by looping with tunnels.

TUNNEL THREE MILES LONG.

The master work of the Albula road is the Albula tunnel. This is more than three miles long and at its highest point is almost 6,000 feet above sea level. The tunnel was begun in 1900 and finished in 1902.

After passing through the Albula tunnel the road goes to Samaden and from there to Cellerina. The stretch from Cellerina to St. Moritz will not be completed before next year.

At present the trip from Cellerina to St. Moritz is made in half an hour by diligence. It is hoped that at some future time this road will be carried into Italy.

The government supplied a large part of the capital for the Albula railroad, and the cantons along the line from Thusis to Cellerina pledged themselves to raise the remainder. The total cost of construction was $3,458,720. The cost of the tunnel was $1,201,000. The work was in charge of Mr. Hennings, who was born at Kiel and later studied in the technical schools of Hanover and Zurich. It was he who planned the great St. Gothard tunnel. He has also done notable work in the Tyrol and the Black forest.

CARL VON BRUNE.

WHISTLING FOR THE KING.

(Continued from page Eleven.)

Sandringham House is that of the festivities attending the departure of guests. Every man and woman who has been invited down to Norfolk on a visit to their majesties gets weighed by either the king or Prince of Wales before leaving. This is the parting function on the morning of departure. Each guest's weight and a description of his or her dress is set down in a book kept for that especial purpose. No one knows the origin of this queer custom, but the king began practising it years ago as Prince of Wales, and keeps it up as king.

Mrs. Alfred Harmsworth, wife of "Alfred the Great," who made his American debut as one-day editor of a New York newspaper, is suddenly evincing a practical interest in daily newspaper work. In the daily paper for women which Mr. Harmsworth intends to start in London next month, Mrs. Harmsworth will have considerable influence. Manuscripts already received for possible publication in the "Daily Mirror," are submitted to her as last court of appeal. It is said to be on her suggestion that Mr. Harmsworth has decided to open a club department, and to make the "Mirror" organ of all the women's clubs in London.

No such feature has heretofore appeared in a London paper, common as it has long been in American publications. Mrs. Harmsworth, like Mrs. C. Arthur Pearson, wife of the owner of that other semi-American newspaper published in London, the "Daily Express," has before this helped her husband found new journals. But the "Daily Mirror" is her first experience with a daily paper. Londoners are wondering whether this new woman's paper will eventually meet a fate similar to the French feminist journal, "La Fronde," which had to suspend publication after three years' worthy effort to live.

For the first time in the history of the universities of medicine in England, a woman—and a young one, too—has been appointed professor on terms of absolute equality with men. Miss Winnie Cullie, a London girl and graduate of Newnham college, who has just been made co-professor and lecturer on physiology in the University of Medicine, London, has scarcely passed her 25th year. She was a fellow student at Newnham with Miss Ida Smedley, who is recognized as the leading woman chemist of England. Miss Smedley, also only 25, has just gone back to Newnham, her Alma Mater, as lecturer on chemistry. She is the only woman who has ever read a paper before the British Association for the Advancement of Science. So great was Miss Smedley's success on the recent presentation of her paper, that the association invited her to go to South Africa next year, all expenses paid, to deliver an address on an allied scientific subject. Miss Smedley, although one of the most learned of England's proverbially blue-stocking university women, is pretty and remarkably tasteful in her dress. Some one remarked of her the other day, "Whoever would have thought she had seen the inside of Newnham!"

Mr. and Mrs. Booth Tarkington, together with Mr. Tarkington's mother and father, have arrived in London and are stopping at the Dysart hotel, Cavendish Square. They will remain in London three weeks and then go to the continent for a winter tour.

WHAT TO EAT.

Valuable Suggestions for the Kitchen and Dining Room.

This matter will be found to be entirely different from and superior to the usual run of food articles, in that every item is a nugget of culinary wisdom and eminently practical.

Conducted by Katherine Kurtz, Marquette Building, Chicago, to whom all inquiries should be addressed.

Menus for Next Three Days.

SUNDAY.

BREAKFAST.
Fruit
Cereal Cream
Bacon Grilled Tomatoes
Corn Bread Coffee

DINNER.
Clear Soup
Roast Duck Baked Apples
Sweet Potatoes Mashed Turnips
Apple and Celery Salad
French Puff Pudding Coffee

SUPPER.
Cold Sliced Tongue Grape Catsup
Hot Potato Salad
Fruit Cake
Cocoa

MONDAY.

BREAKFAST.
Fruit
Cereal Cream
Plain Omelet Stewed Potatoes
Rolls Coffee

LUNCH.
Duck Salad Stewed Celery
Grape Tart Tea

DINNER.
Corn Chowder
Breaded Veal Cutlet, Cream Gravy
Tomato and Onion Scallop
Egg Salad
Apple Crumb Charlotte Coffee

TUESDAY.

BREAKFAST.
Baked Apple
Grilled Ham Baked Sweet Potatoes
Corn Griddle Cakes Syrup
Coffee

LUNCH.
Scalloped Oysters, Stewed Tomatoes
Stewed Fruit Coffee Cake
Cocoa

DINNER.
Broiled Steak Baked Mushrooms
Mashed Potatoes Egg Slaw
Banana Float
Coffee

Apple Batter.

Take 12 juicy apples, pare and slice thin; make a batter about as thick as for pound cake with six beaten eggs, a pint of rich milk and enough flour to make the batter the desired consistency. Just before placing it in the baking dish stir in a tablespoonful of melted butter. Stir the batter and fruit together, pour into a well buttered pudding dish and bake in a moderately quick oven for 45 minutes.

Apple Bird's Nest.

Beat two eggs, add them to a cup of sweet milk with a tablespoonful of butter melted slowly. Sift two cups of flour with two even teaspoonfuls of baking powder, and gradually stir the liquid into the flour until you have a smooth batter. Have ready six tart, juicy apples, pared, cored and cut in quarters. Take a well greased pudding dish, pour in half of the batter, cover with the apples, then pour over the remainder of the batter. Bake in a quick oven for half an hour. Serve with hard sauce.

Apple Floating Island.

Beat the whites of three eggs with half a cup of powdered sugar and two cups of cold stewed apple which has been put through a sieve. Whip until the mixture is very light. Heap this lightly on top of a boiled custard composed of the beaten yolks of three eggs, three cups of milk, four tablespoonfuls of sugar and one tablespoonful of vanilla extract. Serve very cold.

Apple Crumb Charlotte.

Take two cupfuls of strained hot apple sauce; melt in it half a cup of butter; beat thoroughly and let cool, then beat three eggs with a cup of granulated sugar, flavor with the grated rind of an orange and the juice of half a lemon or nutmeg or vanilla, to taste. Butter a small, deep pudding dish, sprinkle stale cake or bread crumbs thickly over sides and bottom, then pour in the mixture and bake for 20 or 25 minutes. It may be eaten cold or hot, but is best cold.

Apple a la Duchesse.

Cut two dozen and a half balls from firm, juicy, pared apples, using a vegetable scoop for the purpose. Put a cup of granulated sugar in a saucepan with a cup of boiling water, add a slice of lemon, and when the syrup boils clear put in the apple balls and cook gently without breaking until tender, then drain the apples, roll while hot in melted currant, strawberry or in cranberry jelly. Heap in mound shape on a dessert dish. Cook the left-over pieces of apple in the syrup, making a thick, rich marmalade; pour this about the apple balls and sprinkle the whole with some finely blanched and chopped almonds.

BUILT ON ROOSEVELT PLAN.

PAUL CLAUDE and FAMILY of SEVENTEEN. WOOLSTOCK. IOWA.

The above group shows Mr. and Mrs. Paul Claude of Woolstock, Ia., and their 17 hale and hearty children, the eldest of which is only 17 years of age. The family lives on a large farm near Woolstock on the great Iowa prairie.