

Second Quarter.

Practical.—Chipping wrought-iron, tapping, drilling, and screwing with stocks, dies, and taps. Hand-turning in brass and iron.

Tools.—The lathe, hand turning-tools; stocks and dies, taps, vice-clips.

Lecture.—Moulding and casting operations.

Third Quarter.

Practical.—Turning by hand and slide rest; simple chuck-work; forging, drawing out a chisel or drill, &c.

Tools.—Lathe, chucks, the forge and its accessories.

Materials.—Wrought-iron and steel in the bar.

Fourth Quarter.

Exercises combining a knowledge of all the foregoing work, but more advanced.

(4.) PARISIAN MANUAL AND OCCUPATION EXERCISES.

As an illustration of method I quote from a report by Consul T. Schoenhof upon French education, which may give some idea of the importance attached by that country to manual instruction: "The public-school system commences with the kindergarten schools, numbering in Paris alone over a hundred and thirty, with children ranging from two to six years. This system is continued in the standard-work of the regular schools by paper- and cardboard-work and clay-modelling."

I cannot do better than give the programme of one school as an illustration of the arrangement and methods employed:—

MANUAL EXERCISES INTENDED TO DEVELOP THE CHILDREN'S SKILL OF HAND.

Elementary Class, Seven and Eight Years old: One Hour per Day.

Elementary exercises in freehand drawing; symmetrical arrangements of forms; cutting out pieces of coloured paper, and applying them upon geometrical forms; exercises in colouring; cutting out geometrical forms in cardboard; representations of geometric solids: exercises to be done first on squared paper, and afterwards on plain paper. Small-basket work: Arrangement of strips of coloured papers (plaited). Modelling: Reproductions of geometric solids and simple objects.

Intermediate Class, Nine and Ten Years old: One Hour per Day.

Cutting out cardboard patterns; construction of regular geometric solids; cardboard models, covered with coloured drawings or coloured paper. Small-basket work: Combination of plaits; basket-making. Objects made of wire: Trellis or netting; wire-chain making. Combination of iron and wood: Cages. Modelling simple architectural ornaments. Object-lesson: Principal characteristics of wood and common metals.

Upper Classes: Two Hours per Day.

Drawing and modelling; continuation of the exercises in the preceding class; repetition of the ornaments previously executed in the form of sketches, with dimensions attached to them; drawing the requisite sections for this purpose; reproducing the sections as measured sketches; study of the various tools used in wood-working—hammer, mallet, chisel, gimlet, centre-bit, brace, screw-driver, compasses, square, marking-gauge, saws of different kinds, jack-plane, trying-plane, smoothing-plane, files and rasps, level. Theoretical and practical lessons in the above. Planing and sawing wood; construction of simple joints. Boxes nailed together, or joined without tacks. Wood-lathe; tools used in turning; turning simple geometric forms. Study of the tools used in working iron—hammer, chisel, cutting-tool, cold-chisel, squares, compass, files, &c. Theoretical and practical lessons concerning them. Exercises in filing, smoothing, and finishing rough forgings or castings (cubes, polygonal nuts).

The wood-working shop contains twelve carpenters' benches and four turning-lathes. At the latter they commence on a plain stick of a certain height, which is turned into as many as seventy-six different ornamental pieces, made either to stand separately or to fit into others. The workshop for iron contains twelve vices—four at each side-wall, and four at one end of the room. In addition, fully equipped schools are provided with a boring-machine, forge, and anvil. In the use of iron they start from a plain piece, and work this into various simple geometrical shapes and other forms by the application of the file.

Scholarships.—I would suggest that forty scholarships should be available in each district to boys in their third year's course of work, the value being 10s. and free instruction in evening classes for a period of twelve months, 5s. of this amount being contributed by the Education Department and 5s. by the Board. Should higher-grade schools be established these scholarships will be unnecessary, as the instruction will be given as part of the course of school work.

Workshops and Appliances.—One of the best centres visited under the London School Board for wood-work was Hasebriggs Road, Clapham, where accommodation is provided for forty boys.

The plan of the room is similar to the sketch printed with Plate XIII. The room being about 70 ft. long by 22 ft. wide; two boys to each bench, each having a clear 4 ft. of space. The number of instructors for a class of forty is—1 instructor, 1 assistant, and 1 pupil-teacher; for a class of twenty—1 instructor and 1 pupil-teacher.

The following tools will be required for twenty boys:—For each boy: 1 jack-plane, 5 firmer-chisels, $\frac{1}{4}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.; 1 tenon-saw, 10 in. long; 1 screwdriver, 1 hammer (No. 2),