

Course of instruction for the teaching of manual work in Germany / as arranged by the Common Union at Dresden ; translated with the permission of the Union by Moritz Uhland ; with introduction by John Beaton.

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COURSE OF INSTRUCTION
FOR THE
TEACHING OF MANUAL WORK
IN GERMANY,
AS ARRANGED BY
THE COMMON UNION
AT
DRESDEN.

TRANSLATED, WITH THE PERMISSION OF THE UNION, BY
HERR MORITZ UHLAND,
Professor of Languages.

WITH INTRODUCTION BY
MR. JOHN BEATON, M.A.,
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[ALL RIGHTS RESERVED.]

JOHN HEYWOOD,
DEANSGATE AND RIDGEFIELD, MANCHESTER;
1, PATERNOSTER BUILDINGS,
LONDON.
1889.

To

HERBERT BIRLEY, Esq., J.P.,

CHAIRMAN OF THE SCHOOL BOARDS

OF

MANCHESTER AND SALFORD,

This contribution to the cause of Manual Training in Schools is respectfully,
and by permission, dedicated as a small tribute to his unwearied and
successful efforts in the cause of education,

By THE TRANSLATOR.

INTRODUCTORY.

To those who are exercising themselves with the problem of education this translation of the scheme, as used by the Common Union, at Dresden, is offered as a contribution to the phase of manual teaching. The Swedish Sloyd, the German Knaben-handarbeit, and the still more advanced American Manual Training, are only different developments of one principle, accommodated to national and local requirements. The Swedish and American systems are amply represented in this country by the brochures by students of and at Naas, and by the works of Professors Woodward and Goss, but we have hitherto seen nothing in English to enable us to ascertain the German modification. Each of the schemes has distinctive features and no less palpable advantages, and the earnest endeavour of those who wish to see this essentially educational principle engrafted on our English schools must seek to keep what is good in all systems, and reject what is not suited to the taste and genius of the English people. To this end the following maxims should, in my opinion, be rigidly adhered to:—

1. That the tools employed should be the simplest that are adapted to the work.
2. That they should be such as are usually employed in the country, and can be readily procured.
3. That the exercises should be graduated so as to illustrate the origin of forms and their combinations.
4. That the models for these should be of common use in the country.

Any attempt to bind the principles of Sloyd or Knaben-Handarbeit with the use of Swedish or German tools will, I am persuaded, be a grand mistake, for although these tools may cost less at first, from my experience of them I should say the maintenance will in the long-run make them expensive. As Professor Woodward says, in effect, the form of our tools is not the result of chance, but the result of the thoughtful application of principles to accomplish the greatest amount of work with the least effort. Another reason for using the common tools of the country is *that nothing should be taught in the school* which may have to be unlearned afterwards in the workshop; and from the exercises laid down in the following pages it will be seen that they are within the compass of *our common* tools, fewer of which will be necessary than those found needful in Leipsic.

Manchester, May, 1889.

J. BEATON, M.A.

THE COURSE OF INSTRUCTION.

§ 1.—THE PURPOSES OF TEACHING MANUAL WORK.

The problem which the Common Union at Dresden for instruction in manual work has set before itself, is the training of its pupils from the age of six years.

(a) So as to cultivate their dexterity, their powers of observation, and their practical sense.

(b) To know and work in the materials most commonly required and used.

(c) To know and work with the tools in most common use; and

(d) So as to develop and guide, by systematic instruction, their natural ability and power of work.

§ 2.—THE RELATION OF MANUAL TRAINING TO THE SCHOOL.

The Common Union at Dresden will seek to solve the problem of instruction in manual work, quite independently of, but in the closest of relation to, the School. It will especially support the education and training of the young in practical, suggestive, healthy, intelligent, and neatly-executed bodily work.

§ 3.—THE RELATION OF MANUAL TRAINING TO TRADE.

The articles produced by the instruction in manual work of the Common Union at Dresden shall be such as are serviceable in the playground, the school, and the home; but *not* of a kind liable to be realised as valuable in trade. They will, however, afford the pupil an insight into the nature of the most common articles of trade, as well as guidance to a right judgment of the quality and value of the productions of trade.

§ 4.—STAFF.

The instruction in manual work of the Common Union at Dresden will be given, partly by artizans skilled in imparting instruction, partly by such national schoolmasters as have had an efficient training and sufficient practice in those branches of manual work which they profess.

§ 5.—THE FORMATION OF STAGES.

The following stages are arranged for the pupils in manual work :—

(a) Preliminary Stage: For pupils of six and seven years of age (1st and 2nd school years).

(b) First Stage: For pupils of eight and nine years of age (3rd and 4th school years).

(c) Second Stage: For pupils of ten and eleven years of age (5th and 6th school years).

(*d*) Third Stage: For pupils of twelve and thirteen years of age (7th school year).

(*e*) Fourth Stage: For pupils of thirteen and fourteen years of age (8th school year and according to requirement).

(*f*) Fifth Stage: For pupils of fourteen years of age and upwards. (For pupils in the 9th school year, and finishing pupils, for more advanced pupils of higher institutions as well as for adults.)

The arrangement of the stages according to age and school year is only general. Pupils may be put into a higher or lower stage according to their progress, strength, and skill.

In every stage the time devoted to instruction is a lesson of two hours once or twice a week.

§ 6.—PRELIMINARY STAGE (§ 5^a).

NOTE. The object lessons §§ 6—11 should be closely connected with the models used in the workroom.

Materials.—White and coloured paper, in the first instance, prepared. Book with lines crossed in squares of one centimetre. Paste.

Tools.—Pencil, scissors, paste-brush, and half-metre-rule.

Lessons.—The following object lessons are adapted to train the pupil how to treat lines, angles, and surfaces, as well as colour: to draw lines to scale; to cut with the scissors to line and scale; to arrange colours; and to put together paper figures with due regard to scale and colour.

Forming plane surfaces to scale (square, rectangle, triangle, and circle), putting the same together, according to a definite order and colour.

Making articles of ornament, and for common use by folding and pasting, *e.g.*, chains for Christmas tree, stars, small paper bags, nets, little flags, triangular paper darts, toy houses, chairs, small stools, tables, and picture books, &c.

§ 7.—FIRST STAGE (§ 5^b).

Materials.—(*a*) For PASTEWORk.—White and coloured paper in sheets, book with white and coloured leaves, single cardboard sheets, lastly prepared paste and paper.

(*b*) For WOODWORK.—Square rods of wood dressed and moulded, small boards of soft wood, wild cherry wood, reed-sticks, turned wood rings (with carved figures), wire nails.

Tools.—(*a*) For PASTEWORk.—The same as in the preliminary stage, and, in addition, a paper knife, mount cutters' knife, and cutting board.

(*b*) For WOODWORK.—Sprig-bit, hammer, pincers, rule, pruning-saw, cutting block, trying square, handsaw, drawing knife, carving tool, half round rasp and file, glass paper.

Exercises.—The object of the following lessons is to develop a more elaborate treating of lines (straight and curved), angles (right, acute, and obtuse), surfaces (parallelograms, triangles, circles, and polygons), as well as the arranging of colours.

(a) FOR PASTEWORk.—A few of the articles of the preliminary stage, and, in addition, the dissection and construction of geometrical figures, and the pasting on of such, and of separate animal figures in scrap-books, and picture books, the decoration of surfaces, the making of simple articles for amusement and use, *e.g.*, small work baskets, wall letter-racks, &c., partly of prepared pasteboards.

(b) FOR WOODWORK.—Measuring small rods with the rule, cutting with the saw, measuring small boards, the use of the rule and square; cutting and joining small boards by the use of the handsaw, hammer, and nails, making little chests and boxes, the treatment of small boards with the drawing knife, rasp and file for flower sticks, stands, frames for window cases, twirling-sticks, pop-guns from wild cherrywood, &c.

§ 8.—SECOND STAGE (§ 5^c).

Materials.—(a) FOR PASTEWORk.—Pasteboard, different sorts of paper, prints (time-tables, calendars, &c.), cloth, ribbon, eyes.

(b) FOR WOODWORK.—As in the first stage, and in addition, rough angular laths, boards of soft, afterwards of hard wood, alderwood, wild cherrywood, nails, hooks, screws, hinges.

Tools.—(a) FOR PASTEWORk.—The tools of the first stage, in addition, a steel rule (straight-edge), an iron square, compass, and protractor, punch and eyelet pincers, plate of flat tin (on which to paste the paper), pliers.

(b) FOR WOODWORK.—The tools of the first stage, and, in addition, jack plane, smoothing plane, double iron plane, trying plane, bowsaw, sprigbit, screw driver (turnscrew), scraper, marking gauge, shooting board, screw clamp, mortise chisel, level, whetstone.

Exercises.—The lessons in this stage form an introduction to a knowledge of materials and the means of uniting them; they treat exhaustively of straight and curved lines, and how they are originated, of angles according to their degrees, as well as those surfaces not treated in the first stage.

(a) FOR PASTEWORk.—Cutting paper with the knife, notching the pasteboard, working to models of given size, setting out and covering surfaces, stitching with needle and thread, making articles of common use, *e.g.*, key labels, almanacs, time tables, small cases for holding mineral specimens, cigar trays with geometrical figures, watch stands, &c., &c. Making educational apparatus as wind-mill models, dancing serpents, chromatic top, dice, and the like.

(b) FOR WOODWORK.—Making rough angular laths into flower sticks, stands, frames; constructing from stronger laths brush handles, rakes, stilts, twirling-sticks, spoons; from broader boards, window-clamps, cross for Christmas tree, needlework frame, and so on; making from the boards corner brackets, clothes-line boards, clothes racks, towel rails, bootjack, ham board, &c.; joining surfaces by glue, nails, screws, to form garden stools, starling cages, chests, toy-houses, salt-cellars, blacking-boxes, &c., &c.; making footstools, flowerpot stands, out of wild cherry wood.

§ 9.—THIRD STAGE (§ 5^d).

Materials.—(a) For PASTEWORk.—As in the previous stage.

(b) For WOODWORK.—As in the previous stage, and in addition small boards of lime tree.

Tools.—(a) For PASTEWORk.—As in the previous stage.

(b) For WOODWORK.—As in the previous stage, and, in addition, rebate-plane, old-woman's tooth, finishing plane, rip-saw, dovetail-saw, fret-saw, drawing knife with long handle, brace and bits, mitre-block, and scribe.

Exercises.—The lessons in this stage form an introduction to simple geometrical and freehand drawing, working to scale and model, a knowledge of the preparation of glue. They train the pupils to calculate the cost of making the articles, to grind the knife and other simple tools, and in them flat surfaces, and their calculations are exhaustively treated.

(a) For PASTEWORk.—Continuation of the work of the previous stage, making more difficult articles in cardboard, ornamented with coloured figures, as chessboards, maps, small mineral specimen cases, and cases for holding game counters, educational apparatus for demonstrating mathematical, geographical, and physical laws.

(b) For WOODWORK.—Continuation of the work of the previous stage, the employment of small boards on the edge, *e.g.*, bracket, egg-stand, bookshelf, the construction, by means of dovetailing, out of small boards, of boxes, blacking-boxes, and coal scuttles, the construction of models to illustrate the teaching of mathematics, geography, and physics, *e.g.*, the inclined plane, wedge, lever, pendulums, pop-gun, windmill.

The commencement of carving, the cutting into triangles and squares, putting together corner pieces, for the ornamentation of woodwork, such as small frames, letter-presses, &c.

§ 10.—FOURTH STAGE (§ 5^e).

Materials.—(a) For PASTEWORk.—As in the preceding stage.

(b) For WOODWORK and the simplest METALWORK, as in the preceding stage, and, in addition, walnut, maple, mahogany, and wire.

Tools.—(a) For PASTEWORk.—As in the preceding stage, and, in addition, wooden moulds (such as cylinders on which to form pencases, &c.).

(b) For WOODWORK.—As in the previous stage, and, in addition, compass saw.

Exercises.—The lessons in this stage are for the purpose of training to work to drawing, and scale, to prepare the material, to grind one's own tools, to calculate the cost of making the articles, to use stains and wax; in them also surfaces and solids are exhaustively treated, and some physical laws explained.

(a) For PASTEWORk.—Articles in common use of geometrical form, *e.g.*, stands with curved edges, letter-presses with foot, cigar-

tray with volute edge, writing utensils, pen and pencil boxes, also some educational apparatus, as maps mounted on cloth, electric see-saw, pantometer, camera obscura, and so on.

(*b*) FOR WOODWORK.—Work in rebating and open dovetailing, working to model and scale, such as bookshelf, T square, boxes, footstools, sculpture and carving in triangle, square, polygon, semi-circle, and circle. Practice in making useful articles, such as the hamboard and the like; simple inlaid work, such as a thread reel, ruler, and the like; educational apparatus, such as rollers, wheel, pulley-blocks, cogged wheel, and the like; simple work in wire, such as pinching off, bending red-hot wire, the making of eyes, hooks, simple geometrical wire models for practice in the use of the blow-pipe.

§ 11.—FIFTH STAGE (§ 5^f).

Materials.—(*a*) FOR PASTEWORK.—As in the previous stage.

(*b*) FOR WOODWORK AND SIMPLE METAL WORK.—As in the previous stage, boards, posts, beech, and the other common timbers, veneer, polish, and zinc-plate.

Tools.—(*a*) FOR PASTEWORK.—As in the previous stage.

(*b*) FOR WOOD AND METAL WORK.—As in the previous stage, and, in addition, tothing plane, angle gauge, punch and gouge, metal-shears, turning-lathe, and appurtenances.

Exercises.—The exercises in this, as in the preceding stage, are for the purpose of training the pupil to work to his own plans, to get up his own materials and tools, and to make and use polish.

(*a*) FOR PASTEWORK.—Useful articles of geometrical form, such as album covers, glove boxes, as well as educational apparatus, eight-cornered dies for demonstrating the extraction of the square and cube roots, cardboard boxes, with mirrors to appear to see round corners, forms of crystals, brief stitching, and so on.

(*b*) FOR WOODWORK.—The repetition of the work in the previous stage. Cord-winder, crossbow, square, octagonal, and round stuff; making finer boxes out of small boards by secret dovetailing, working with drawing knife, mortise chisel, and axe, to form such articles as footstool, garden seat, flower-pot stand; work in jointing and grooving, such as drawing-boards; work in wild cherry-wood, such as chairs and benches.

CARVED WORK.—Cutting out ornaments, in raised and sunken work for practice and for the decoration of useful articles.

INLAID WORK.—Such as chessboards, pin or needle cases, brush backs.

EDUCATIONAL APPARATUS.—Such as stamping-mill, suction and force pump, &c.

Turned work, making cylinders and cones.

Doubling and fastening in stone, with gypsum, of iron hooks, &c.

SIMPLE METAL WORK.—Making the simplest articles, such as twine holder, electric machine, and so on.



