

found to be a ground of commendation if the lessons have been illustrated experimentally by the teacher. In the newer education that is no longer a sufficing ideal. The pupils must work out the exercises themselves, making their own measurements, adjustments, and experiments with simple apparatus supplied them by the school for the purpose. "The pupil must be introduced to the objects of nature not only through the intellect, but also actively." In this connection we recommend to teachers the admirable scheme of scientific instruction issued by the School Board for London, and carried out by the specially appointed science demonstrator in conjunction with the ordinary teachers.

Again, in arithmetic and mensuration many applications of the principle must suggest themselves. In geography the clay modelling may enforce the instruction most efficiently to gain not only elementary ideas of islands, mountains, &c., but to fix in the children's minds in the most permanent fashion the vertical configuration of the immediate neighbourhood and the main physical features of their own and other countries. In some European schools it is quite a common practice for the boys to learn their geography after this method under the happiest auspices. They are taken by their teacher on repeated excursions round the neighbourhood. On one occasion they note the direction and the length of the streets or roads, measuring distances for themselves with the tape-line; on another they note the inclination of the ground, the hills, and valleys, learning the names of prominent objects in the landscape; on still another the observation is directed to trees and other natural objects, buildings, and so on. The following lesson in each case consists of a revision in the playground, in which the boys describe what they have seen, stepping out distances on an appropriate scale, and reproduce the physical features learnt by utilising a heap of sand in the corner to form a rough model. Maps to scale on the playground, on a horizontally laid blackboard, and finally in exercise-books, complete the instruction. "Geography," it is claimed, "is thus made not a dry study, or a dry naming of countries, rivers, boundaries, towns, but a subject of which the boy recognises the usefulness and necessity. A map is thereafter to him a picture representing something resembling his own home, with mountains, trees, meadows, birds, animals, men, factories, &c. After such a course of lessons he has learnt fewer facts of geography than the English boy, but he is incomparably better trained in observation; . . . and, above all, this power has been gained with the accompaniment of an eager interest in the lessons."

Again, in history we find the manual method employed in one Continental scheme to illustrate the civilisation of ancient Egypt, reproducing in clay the Pyramid of Cheops, the Egyptian temple pillars without ornament, the conventional lotus-flower, the papyrus-blossom, &c. In another case the ancient pile dwellings, and in another the arms and utensils of the Homeric period, were discussed and modelled. These may be far-away things for the elementary schools of New Zealand, but it is easy to obtain from them some useful hints in the illustration, for example, of architectural features of different periods or in the reproduction of a battlefield.

Further still, in connection with geometry and drawing we may have the manual method applied to the study of simple geometrical forms—sphere, cylinder, cone, cube, prism, pyramid—first discussed, then moulded in plasticine, compared with the original, and then drawn from different points of view. Or we may have the process in a different order, the object being first drawn and then moulded in the solid.

School gardening furnishes still another development of high educational value within the lines of the existing school organization. It may be considered simply as the necessary manual complement of the "agricultural science" now professed in so many schools. Specially suitable as an educational employment in the great majority of instances, and from the character and variety of its tasks equally adapted for both boys and girls, it requires only a competent and enthusiastic teacher to make it a success. This single requirement is indeed hard to fulfil, but there must be a certain amount of latent talent in this direction among our teachers, and the ideal which would turn a portion of the ground of every country school into a manual workshop for half the year is entitled to every encouragement. "Gardening," it is said with manifest truth, "builds up in the most powerful way the child's world of ideas. It enlarges his knowledge of nature, and gives him valuable opportunities for observing the interdependence of all natural objects. Important chapters in the theory of the nourishment of plants, the physics, chemistry, and mineralogy of the soil, botany and natural history, and weather-lore can be treated in quite elementary fashion, and from direct observation."

So far the course of development on one or more of the lines indicated, according to the taste and special abilities of the teacher, presents no insuperable obstacle. But we have yet to consider the harder parts of our problem—the occupations that require "special and appropriate provision" to be made for them at a heavy cost both in money and time, workshop practice in woodwork for boys, and cooking practice for girls. Both are essential to any complete scheme, but on account of the sacrifices involved require to be approached with special care. A wrong decision here may mean the useless expenditure of thousands of pounds, or introduce without adequate benefit a grave interference with the ordinary school organization. The questions primarily to be decided are: (1.) Who shall be the instructors—skilled artisans and the like, or ordinary trained teachers who have acquired the requisite skill? (2.) If the latter, are the teachers to belong to the ordinary school staff or to be specially employed for the purpose? (3.) If they belong to the ordinary school staff, in what way is an organization intended to provide a certificated teacher for fifty to seventy scholars in an upper class to be adapted for the special purpose to practice lessons demanding the service of such a teacher for the maximum attendance of twenty or twenty-four pupils? (4.) Is the "special and appropriate provision" to be made at certain centres for groups of schools or to be attached to each separate school? (5.) In the latter case what limit of attendance is to be fixed? (6.) What provision is to be made for schools below the limit?

The answer to question (1) is comparatively easy. There should be no real doubt at this stage