

tions and in the school garden ; more particular study of the forms and functions of the parts of plants, and variations in these forms and functions in different plants ; observations on the culture of farm and garden crops and orchard and shade trees ; the observing and the distinguishing of the common forest trees.

Observing local minerals and rocks, their properties and uses ; experiments on different kinds of soil ; distinction between hard and soft, pure and impure water, test and methods of purification of water.

Sources of Heat : Experiments to show the effect of heat in the expansion of solids, liquids and gases ; practical applications. Temperature ; thermometer, construction and graduation. Methods of transmission of heat, conduction, convection and radiation ; causes of winds and ocean currents ; ventilation.

FORM IV.

Course of Form III. continued. Animal Life : Relation of fishes, birds and wild animals to man ; life histories of conspicuous and economic insects ; organ and functions.

Plant Life : Study of organs of plants and their functions ; study of economic and wild plants from seed to fruit in the school garden, home garden, farm and forest ; weeds injurious to crops and methods of destroying them ; buds and twigs ; wood, rings, grain, and bark, uses, etc. Experiments to show composition of soils and their relation to drainage, temperature, etc. ; varieties of soils adapted to different crops ; fertilizers, etc.

Implements and tools used on the farm and in the household, mechanical principles applied in their construction.

The atmosphere, its composition. Combustion : simple experiments, study of candle flame products. Changes produced in the air by respiration. Reciprocal relation of plants and animals as regards the atmosphere ; impurities in air. Gravity : air and liquid pressure ; the barometer. Cohesion and adhesion, the nature of these forces ; phenomenon of solution and diffusion ; amorphous and crystalline forms of matter. Practical use of heat, steam and electricity in connection with the study of industries.

FORM V. AND CONTINUATION CLASSES.

The work outlined for this class is too extended to allow of reproduction here. It includes definite courses in Botany,