Soils and plant life as related to agriculture

Cunningham Jules Cool
SOILS AND PLANT LIFE AS RELATED TO AGRICULTURE
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AS

RELATED TO AGRICULTURE

BY

J. C. CUNNINGHAM

PROFESSOR OF HORTICULTURE AND BOTANY IN TWO-YEAR COURSE IN AGRICULTURE
AND TEACHER OF AGRICULTURE TO RURAL AND GRADE TEACHERS
IOWA STATE COLLEGE, AMES, IOWA

AND

W. H. LANCELOT

INSTRUCTOR IN CHEMISTRY, TWO-YEAR COURSE IN AGRICULTURE
IOWA STATE COLLEGE

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PREFACE

This publication represents a desire on the part of the senior author to present a first study in agriculture for rural, grade, and high schools, based upon sound educational principles.

An enumeration of a few of these principles will serve as a key to the plan of the book:

1. Pupils must be led by easy steps from the known to the unknown.
2. One thing at a time must be taught and this one thing must be thoroughly understood.
3. Real progress in education depends upon a pupil’s ability to discern agreements and differences.
4. A teacher should stimulate and direct, but all education comes from the pupil’s voluntary effort.

Our purpose in the pages that follow is to stimulate and direct the pupils in such a manner that they will proceed by “easy steps from the known to the unknown” and that their mental powers will be developed by their own voluntary efforts.

If this book is to be merely one from which a certain number of pages are assigned to-day to be recited in a parrot-like manner to-morrow, it must prove a complete failure.

If the exercises are performed as the authors have intended, a few — and only a few — set rules will be observed:

First. — The pupil must understand clearly before beginning just what he is setting out to do.
Second. — He should follow the directions carefully.
Third. — In his conclusion, he should be expected not
only to show a clear discernment of "agreements and differences" but to state them clearly in his notebook.

The exercises which are here presented can not be performed in all schools by each pupil. The work can easily be completed, however, by assigning one exercise to a certain pupil or group of pupils, the next to another individual or group, and so on. The exercises may be worked out either in the schoolroom or at home, according to the judgment of the teacher. There is no better training for a pupil than that of presenting before a class the facts he has found out for himself.

In the back of the book will be found a list of materials which should be gathered together and stored in some sort of box before school opens. Better still, a cabinet may be made, or secured, in which the materials can be compactly stored. This will save space, which is always at a premium in the schoolroom. All pieces of apparatus should be washed clean, wiped dry, and put back in their places as soon as the work is completed. This will save the teacher much trouble, while it will at the same time tend to teach the pupils neatness and order.

Each pupil should have a durably bound notebook of specified size, a drawing pencil, and a small hand lens.

In addition to a box for the storage of equipment, another should be provided in which a few plants or other perishable articles may be protected from freezing. Ordinarily, it simplifies the work to have some person in the community grow the potted plants which require care and attention in order that they may develop properly.

The material in this book is presented as a first study in agriculture. It deals alone with soils and plants, for we think that agricultural subjects can best be divided into plant studies and animal studies. The latter should be presented as a second, or advanced year's work.

It must not be understood that the chapters in this book