

matriculation examinations is required, the University admits as special or occasional students, without examinations, any person of mature mind, showing ability to profit from University courses. These are treated in all respects like other students except that they may elect what courses they desire, the only difference being that the University degree, which is a certificate of having accomplished certain prescribed work, is withheld.

The next necessity will be the establishment, if not of schools, of short courses, given in the woods for forest rangers and woods' superintendents and foremen, men from the practical field without academic learning, who in a few weeks can be made acquainted with enough of the theory and practice of forestry to understand and appreciate its aims and superintend its execution in the woods intelligently. It is contemplated in connection with the practical field work designed for the University students for the late spring or early summer to organize such courses, when the right kind of men for the work are developed.

The scientific basis for the art of forestry is found in two different directions, according to its dual character as a technical art and a business. The technical art, called silviculture in the broadest sense of the word, relies upon natural sciences, business side which we may call "forest economy," relies upon mathematics, and political economy as well as knowledge of industries, markets and other business concerns.

The field of natural science which the forester must survey is quite extensive, but the different parts are of very unlike relative importance, and, what is from the practical standpoint of the teacher of the sciences which the forester must cultivate a misfortune, only limited portions of each are really needful; hence, it is not easy to limit each field where it is desirable in an institution whose courses are laid out not for the special needs of a special class of students. This brings it about, until possible adjustments are made, that some subjects will be gone into deeper than necessary, others will perhaps be hardly sufficiently expanded, and in this way practical limitations will, as everywhere, curtail the ideal.

Being engaged in plant production, the main study of a forester lies in the fields of botany, geology, and zoology. The botany of trees—dendrology—naturally forms the main basis, but to study such a segregated portion of the large field of general botanic knowledge, the general anatomy, histology and physiology must be familiar, and general ecology—the relation of plants to their surroundings—as well as the specialized ecology of trees, must necessarily form an important part of the forester's equipment.

The knowledge of species, of the plant material is, of course, the first needed equipment, but the knowledge of the life history