

The wood itself contained *Quercus pedunculata* and *Fraxinus excelsior* (co-dominant in places and largely self-sown), *Ulmus montana* (self-sown, locally dominant), *Prunus spinosa* (abundant), *Pyrus malus*, *Crataegus monogyna*, *Corylus Avellana*, *Ilex aquifolium* (self-sown), *Viburnum Opulus*, *Euonymus europæus*, *Fagus silvatica* in places, *Rubus fruticosus* (agg.), *R. cæsius*, *Hedera Helix* (very abundant), *Lonicera periclymenum*, *Geum urbanum*, *Viola silvatica* (agg.), *Circæa lutetiana*, *Oxalis acetosella*, *Primula acaulis*, *Carex silvatica*, *Vicia sepium*, *Stellaria Holostea*, *Arum maculatum*, *Geranium Robertianum*, *Glechoma hederacea*, *Brachypodium silvaticum*, *Bromus asper*, the species of *Epipactis* met with in the hazel-scrub below Slieve Carran, *Aspidium Filix-mas*, *Polystichum angulare*, *Polypodium vulgare*. *Pteris aquilina* occurred, but was very scarce. In parts of the wood the oak was dominant and the ash scarce.

Although developed over limestone the soil over considerable tracts gave no calcareous reaction, and the general characters of the wood inclined to the oak- rather than to the ash-type. It is, however, quite possible that it has been derived from a wood of the ash-type by continuous accumulation of soil and washing out of lime, and this view is supported by the abundance of ash in parts, and the occurrence of species like the Spindle-tree and the Helleborine, as well as by analogy with various English woods.

BOTANY AT CHICAGO UNIVERSITY:

SOME IMPRESSIONS.

TO dream that one dwells in marble halls becomes a reality on entering Chicago University, which provides each of the great branches of learning with a spacious and handsome building on the "campus" or great stretch of wooded land it has acquired on the south side of the city. Overlooking the English Quadrangle and in sight of the Mitchell Tower, supposed to be to the Chicagoan what Magdalen Tower is to the Oxonian, stands the glass-crowned building devoted to the Botanical Department—admittedly one of the strongest in the Science Faculty.

With its two lecture rooms, five large private rooms for professors, seven or eight laboratories, a photographic room, and twelve private research rooms, it may well be the envy of the cramped London student, working in a building not many times larger, yet accommodating a dozen or more departments. Within, the genial professors, who are professorial in nothing but their scholarship, the assistants, and the students, from the gay young freshman to the newly made doctor, form one happy family, in which everyone knows, likes, and is not in the least in awe of anyone else.

You may sit on the stairs and discuss alternation of generations, or anything else with a professor, but you must jump up if anyone wants to pass, and not look as if it were inconsiderate for him to choose that particular moment, for the general atmosphere is that

expressed by the moral little mottoes seen tucked into the name-plate of a research room door, or framed on an office wall, "Keep Smiling," and "Don't Worry."

As may be imagined, the laboratories are splendidly equipped with every modern appliance, and the usual large scale of American work finds expression here in the hundred or more objects embedded at a time for the microtomes (of course running by electricity!), which cut ribbons often more than an inch wide, and daily afford a "potential output" of slides that only Professor Bower could estimate. The fossil slides bearing the familiar names of "Lomax" and "Dulesgate" are old friends to the English visitor, but they will soon have companions of American manufacture, for in the basement of the building is a fine machine for cutting rock sections and a mass of "Cycadella" material only awaiting the enthusiast with the necessary time and strength.

A most agreeable feature in the life of the Department is the weekly club meeting, open to all botanists, and preceded by tea, served with lemon instead of milk, and iced when the shade-temperature is above 90° F. Papers on original work done in the Department are read and briefly discussed, or critical accounts of recently published works are given by members of the Staff. During the fourth or summer quarter—peculiar to the University of Chicago, and throughout distinguished by special features—most interesting *resumés* are given, by specialists in the various subjects, on the present position and problems of morphology, physiology, ecology, laboratory technique, and the teaching of botany.

The elementary work of the Department is, perhaps, its least satisfactory side. Beginners have few, if any lectures. They read up a subject in a text-book, and, for practical work, study stained microtome preparations made for them by the demonstrators. They seem to examine very little material for themselves, and are quite incapable of cutting freehand sections, indeed I doubt if many of them realise such a possibility! I once astonished an advanced student with a preparation made in two minutes by the aid of a sharp razor and a simple water stain, from material fresh from the field, and one cannot help feeling that almost sole reliance on elaborate technique is a mistake, particularly in the training of embryo teachers, a numerous class of students, who later on, in their schools, are not likely to possess, and in any case would not have time to use, the multifarious apparatus so lavishly provided for them by their *Alma Mater*.

Botany, too, shares the disadvantage of all other undergraduate courses, which results from the large number of subjects required for the bachelor's degree, and the consequent impossibility of obtaining a thorough knowledge of any single one. This was curiously illustrated by a student, who had taken an advanced course of laboratory technique, but did not seem to possess rudimentary notions of floral morphology, though she was just about to graduate. Anxious British undergraduates, wondering if they will "get through," may envy the ease with which the Chicago student automatically takes his degree after three or four years of satisfactory work, untroubled by either "Intermediate" or "Final" examinations, but they may be consoled with the reflection that the bachelors are thought little more of than what indeed they are—

well educated school boys and school girls. (Our honour schools have no counterpart, at Chicago, and are scarcely understood). Even the externals of graduation as understood in this country are denied, for no mere bachelor (nor master either) is graced with a hood; that dignity is bestowed only with the highest degree conferred by the University, the Ph.D. The doctorate of philosophy may be taken in any branch of study, from theology to domestic economy, and requires a minimum of three years' study and the production of an original thesis. There is something about the higher degrees a little "through the looking glass" to English eyes, in the fact that names of candidates are published *before* the examination, and, with a remarkable sense of justice, the fee is only paid if the candidate is successful! The doctorate is granted in four grades, of which the highest, "*summa cum laude*," has never been given in the Botanical Department, but, so goes the legend, is being reserved for a second Darwin.

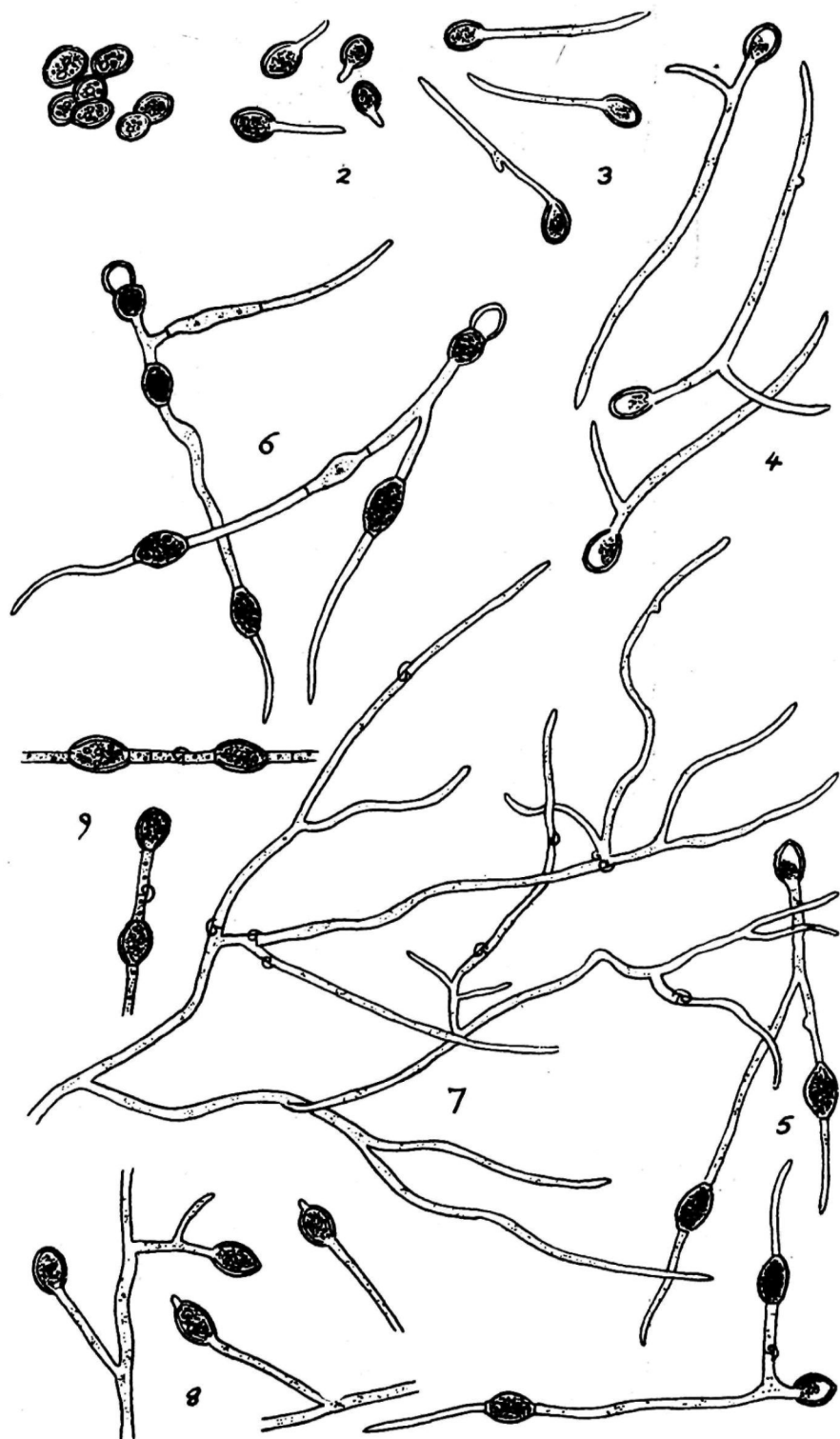
Lectures (always exactly to time) are of a very synthetic and informative character, and the points on which stress is laid are curiously complementary to those emphasised in this country. Relatively little is said of anatomy, and fossils naturally receive very sketchy treatment, but the facts of morphology, embryology, and physiology are dealt with in great detail, some lecturers encouraging intelligent questions, which certainly tend to elucidate matters. Nomenclature and classification are treated as regrettable necessities. Recent work, especially any done in the Department, is always to the front, and the general atmosphere in which all work is done is permeated by the spirit of investigation.

Nor can one praise too highly the treatment of research students. They are never hurried or interfered with, yet on the other hand are not neglected or left to feel that, graduation over, they can shift for themselves. The work in this direction is as carefully organized as in any other; some professors give a stated time in the week, when their research students can come and discuss the particular points reached, and receive encouragement and direction, while though originality is in every way given free play, a lecturer is always at hand to suggest a stain, discuss a theoretical point, or put in order a refractory microtome.

An inestimable help to the advanced student is the magnificent biological library, which seems to contain every book and publication one needs, including works in at least five different languages, and is presided over by a charming lady librarian, who knows where every book is or ought to be, and takes a pride in finding exactly what one wants in the shortest possible time.

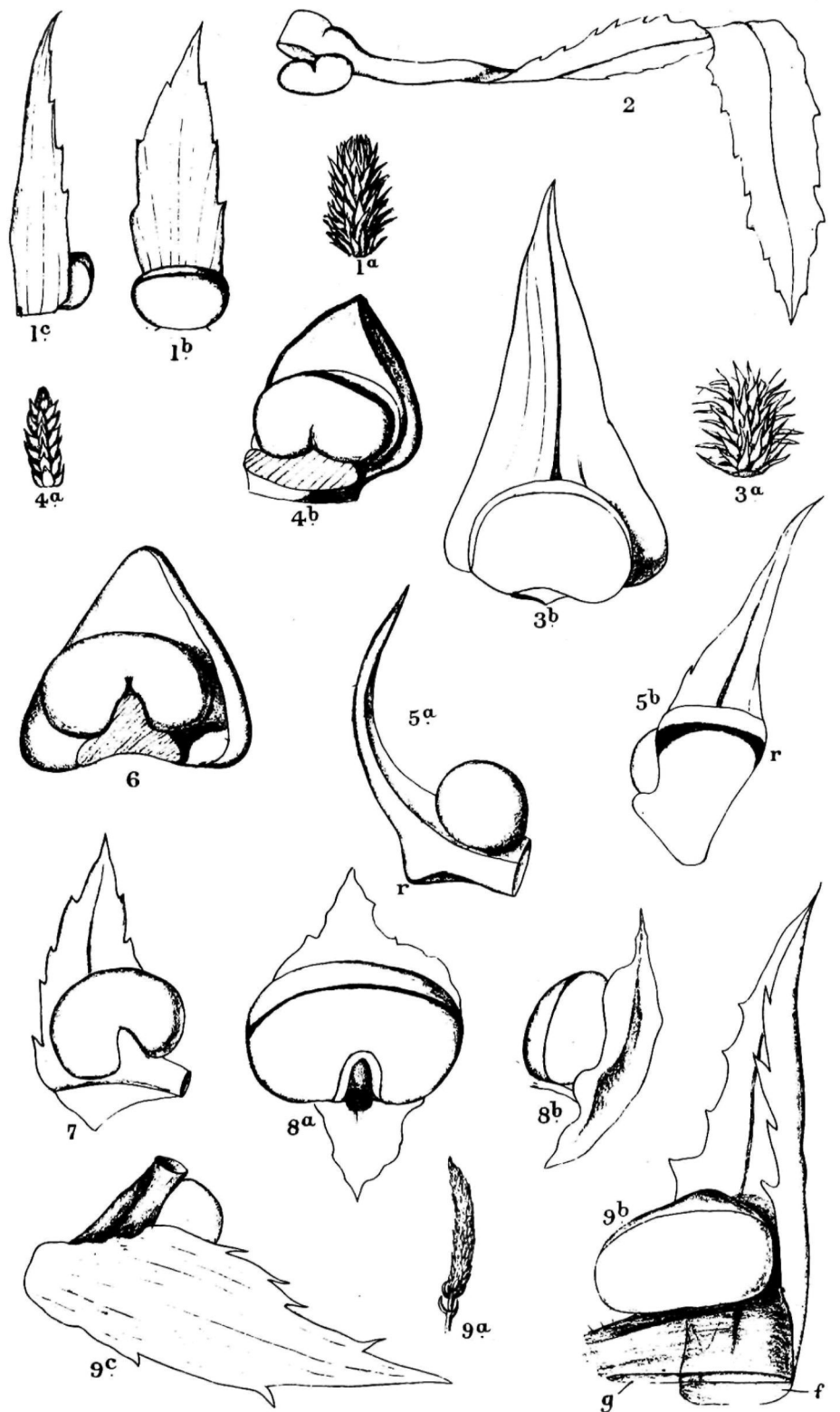
Finally, one cannot close any account, however meagre, of this progressive and up-to-date corner of the botanical world "beneath the hope-filled western skies" without a tribute to the high character, geniality, and capacity for organization of him who inspires the confidence and loyalty of every member of the Department—the Director, John Merle Coulter.

T. L. P.



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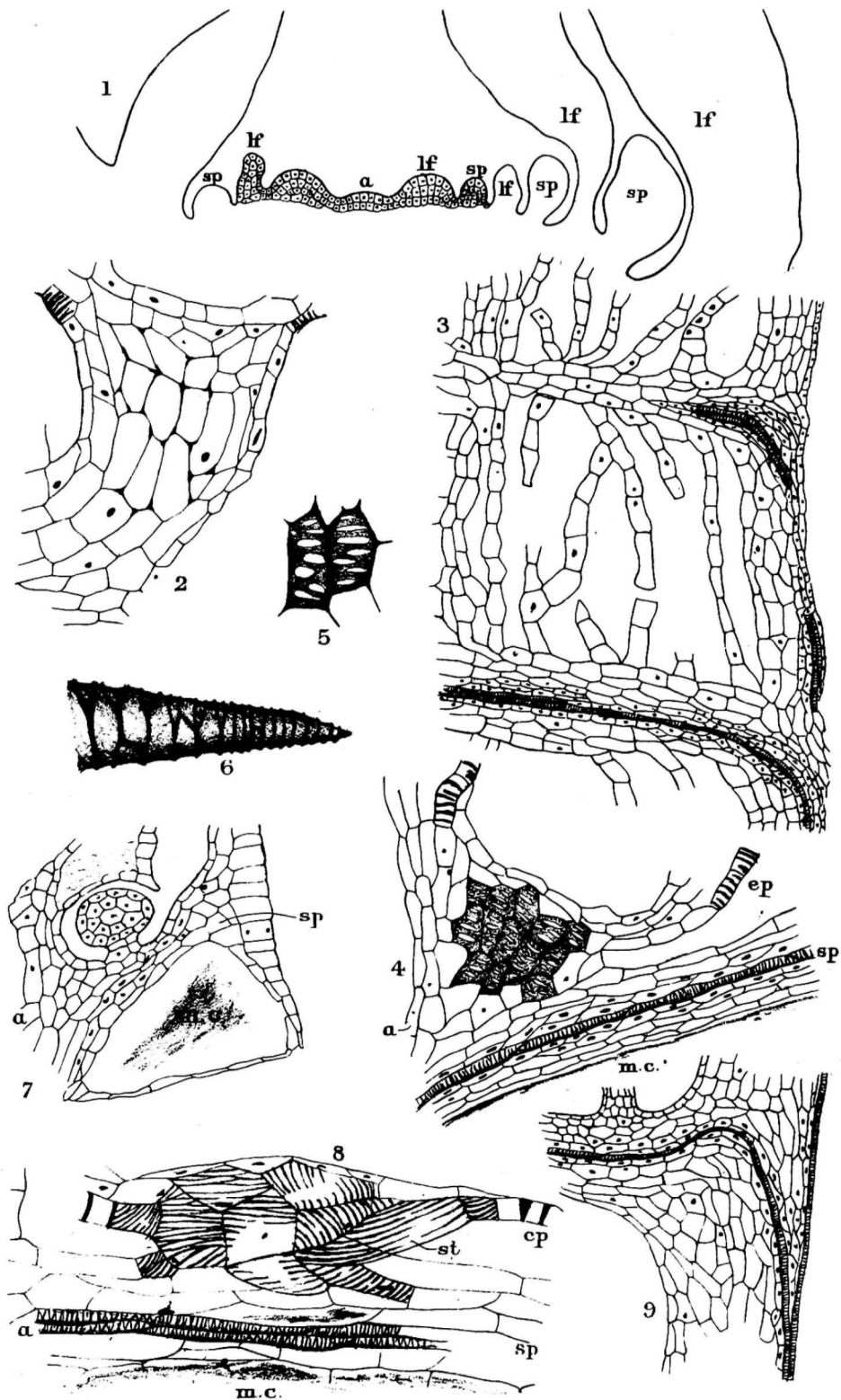
MARRYAT-CHLAMYDOSPORES OF *PLEUROTUS*.



M. G. Sykes. del

Highley litt et sup.

STIKES - SPORANGIUM-BEARING ORGANS OF LYCOPODS.



M.G. Sykes, del.

Higley lith et imp.



Fig. 1.



Fig. 2.



Fig. 3.

R. H. Y. photo.

TAPP — WICKEN FEN.



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