

1.

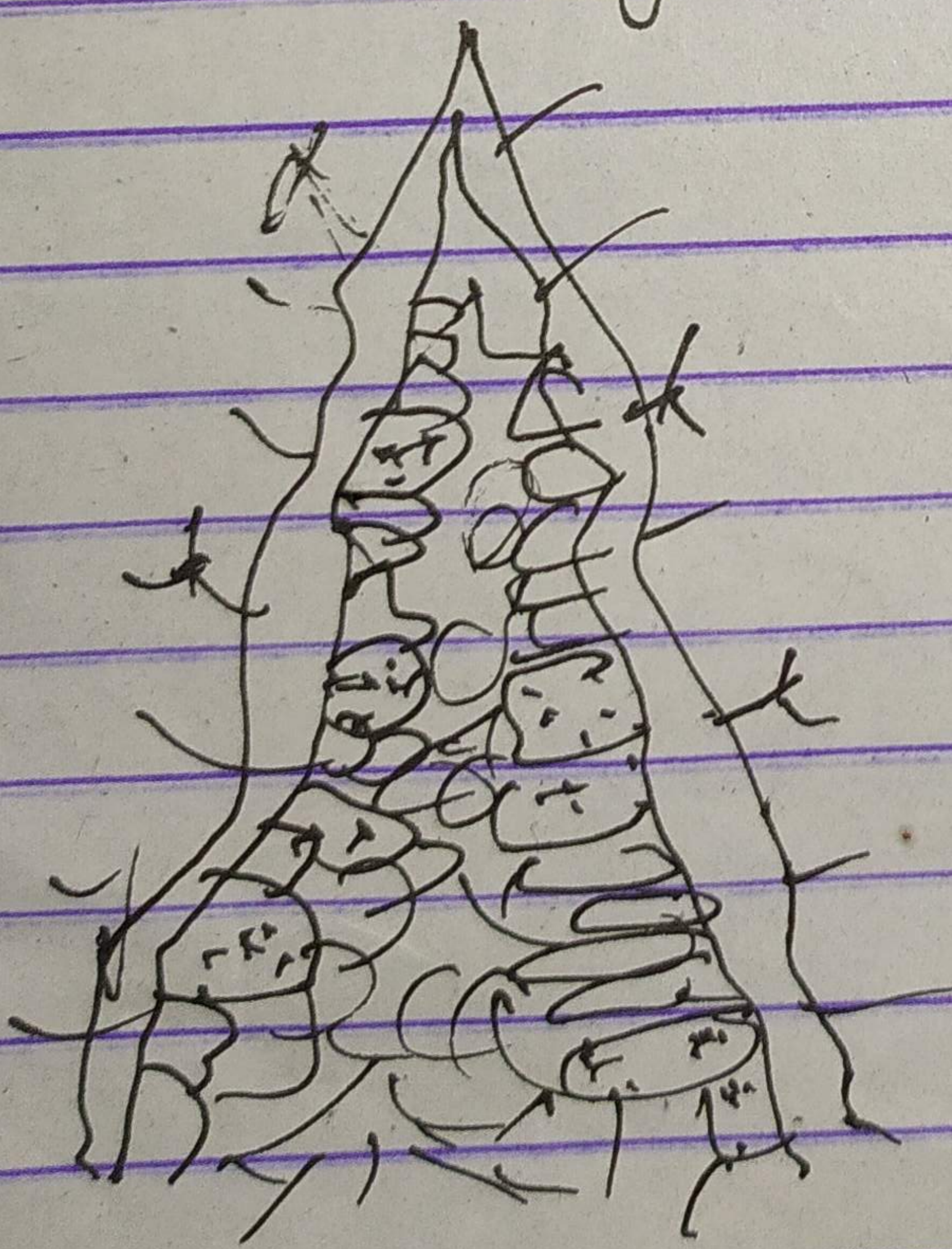
DEPARTMENT OF BOTANY BY: DR. RANJANA
D.B. COLLEGE, JAYNAGAR. ASST. PROFESSOR
L.N.M.U., DBG. (GUEST)
LECTURE NO - 02 DATE: 3rd OCT 2020

B.Sc. PART I (H) PAPER - II
CORE CONCEPT OF PTERIDOPHYTES

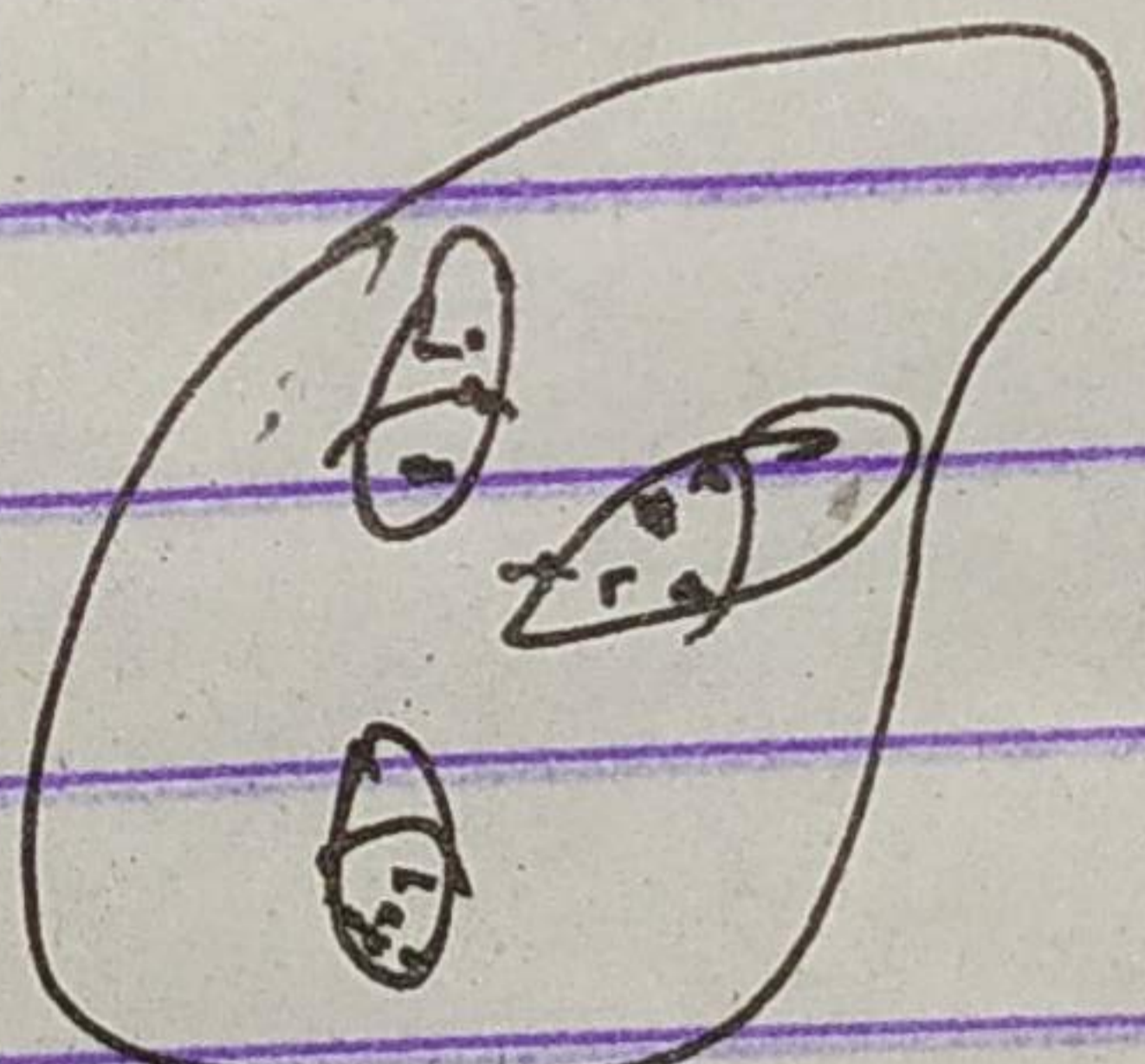
Morphology of Fertile Spikes of
Ophioglossum: Starting of
reproduction from evolution of
fertile spike from the vegeta-
tive leaf. The morphological
nature of the fertile spike
of the ophioglossum has been
a matter of much discussion.
Instead of going into the historical
details of these arguments, the
salient features may be stated.
Roper (1826) interpreted it as a
pair of fused leaves but later
changed his opinion. Bower
(1896) suggested that it is a
septate sporangium growing on
the adaxial face of the leaf
bringing it near to Lycopsidea
but himself discarded this idea
as untenable in 1911. Campbell
(1890) also considered it as a

homologue of the lycopsid
Sporangium but later (1911)
considered it as similar to the
the Sporangium of Anthoceros.
The idea that the fertile spike
is formed by the fusion of
two fertile pinnae remained
popular for a long time, but
now has given way to a
more acceptable view. Chrysler
also has changed his opinion.
Zimmermann (1930) explained
the spike on the basis of
his telome theory as being
derived from a dichotomous
shoot in which the fertile
spike and the vegetative leaf
represent different arms of di-
chotomy. ontogenetic studies
show that the spike of fern
develops from the mesophyll
cells on the adaxial side
whereas a pair of modified
pinnae could arise only from
the margins. The pinna-like
nature is, therefore, not suppor-
ted. The present view is that
the aerial complex represents a
condensed dichotomous branch.

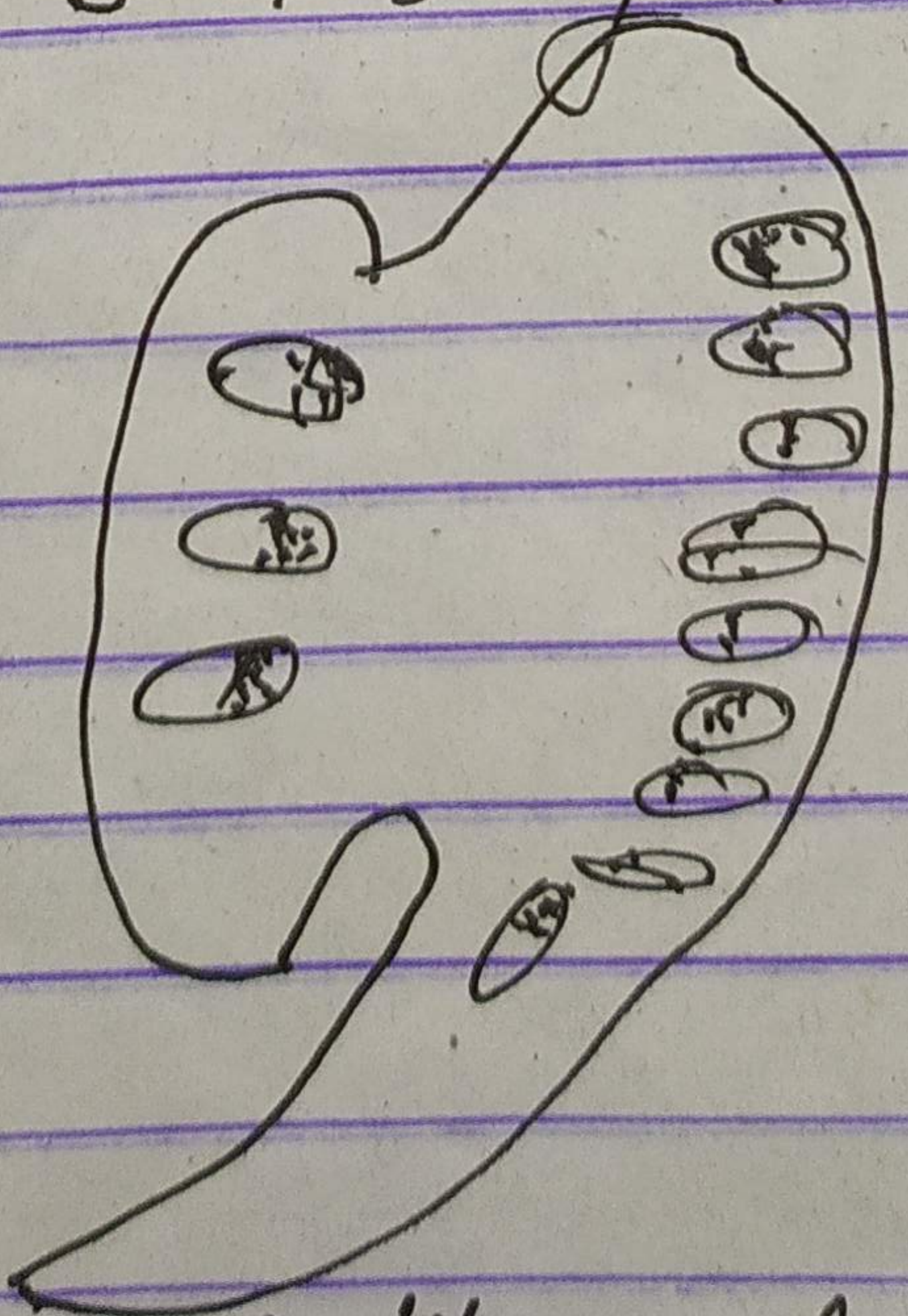
system. Nozu (1950) and Nishida (1957) consider the stalk of the leaf to be a stem-like organ which they name as phyllomophore. Thus, it is reasonable to conclude that the stalk or petiole of the complex is a structure intermediate between stem and a leaf. It dichotomises to form the fertile spike by one arm and the sterile leaf by the other. It therefore differs from the Lycopodiaceae and the Filicopsida in general.



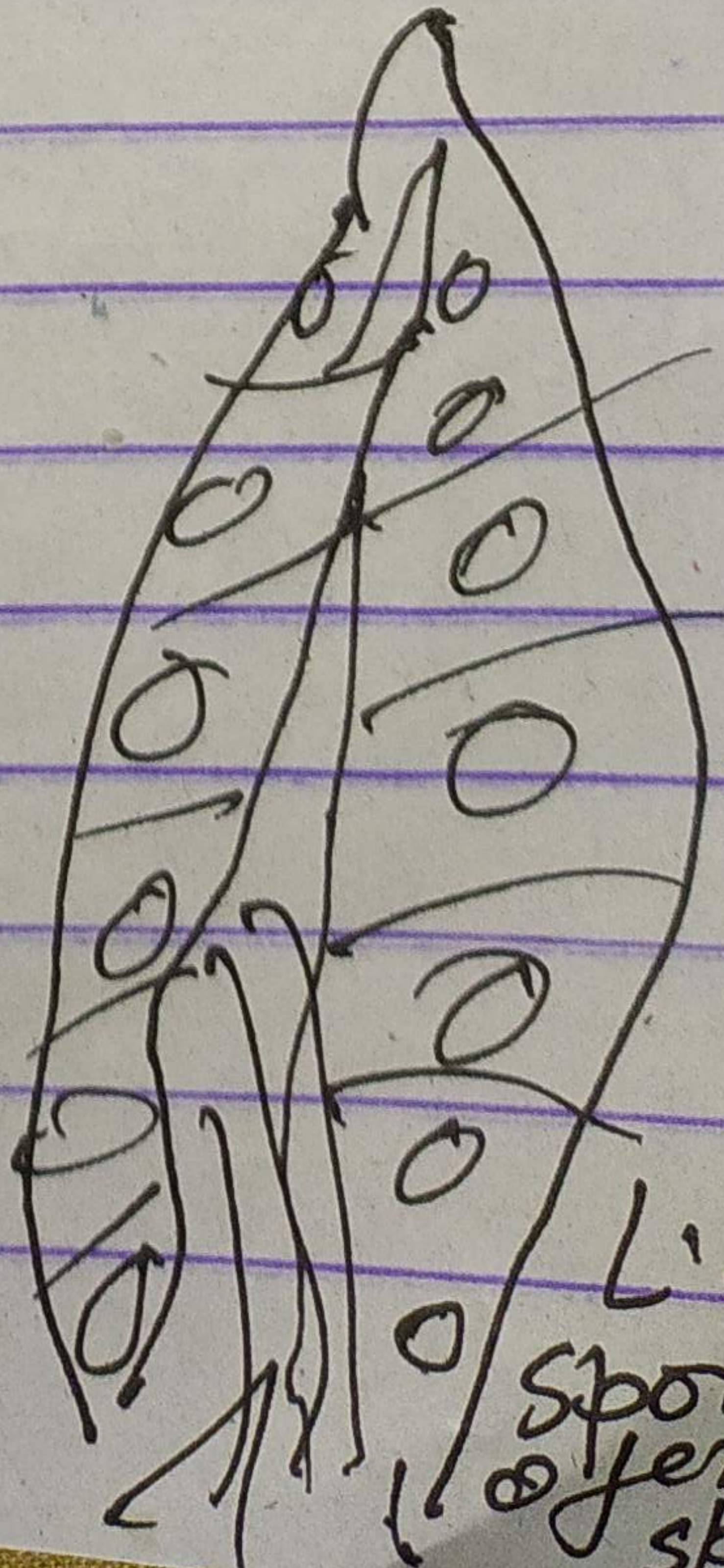
A - L.S of young spike



B. T.S of aerial complex stalk



C. T.S of fertile and sterile lobes.



D. L.S of Sporangiferous spike