

Questions based on lectures and Schneider chapters:

1. Describe the pathway for taste impulses, from tongue to neocortex. (Also, see Brodal.)
2. Study of olfactory projections in what “primitive” species has provided evidence for an early dominance of the olfactory system in evolution of the endbrain?
3. What is a glomerulus (plural: glomeruli)? What are the major components of the olfactory glomeruli in the olfactory bulb? (Also, see Brodal.)
4. Contrast: “compensatory sprouting” and “compensatory stunting” of lateral olfactory tract axons.
5. What intrinsic factor may explain the above phenomena?

Questions on readings: Brodal

6. Where is the uncus? What kind of structure is it?
7. Describe one phenomenon of "olfactory imprinting".

Questions on readings: Lois et al.

8. How can one prove the existence of neuronal precursors in the adult mammalian brain?
9. Describe the migration route of such cells. What guides the cells?

Questions on readings: Striedter

10. Contrast concerted and mosaic evolution.
11. How much of the variation, across different species of mammals, in the size of neocortex, and also other major brain regions, can be predicted from absolute brain size?
12. Explain the meaning of “late equals large”, as a summary of the interpretive work of Finlay and Darlington. (Note: Barbara Finlay, of Cornell University, did her graduate work at MIT under Professors Schneider and Schiller.)
13. Is the “late equals large” rule always followed? I.e., to what extent do some structures evolve mosaically? Give specific examples. (Examples have been shown in class. Additional examples are found in the Striedter book.)

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9.14 Brain Structure and Its Origins

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