D. Special nature of adrenal medulla

- These cells are paraneurons; preganglionic impulses pass via splanchnic nerves directly to adrenal medulla chromatin cells that release noradrenalin and adrenalin.

E. Accessory Ganglion

- Derived embryologically from nervous tissue scattered along abdominal aorta disappear for most part postnatally.

II. CNS Representations of Autonomic N. S.

A. sympathetic N. S.

- The locus ceruleus contains about 50 000 cells that supply about 50% of the entire brain’s norepinephrine fibers from these cells pass through the limbic system and innervate the entire cerebral cortices.

- The fibers converge rostral in the medial portion of the frontal lobes and the disperse caudally to pervade the entire cortical manifold. Stimulation of the locus ceruleus can activate the entire cortex.

B. Parasympathetic N. S.

- The vagal complex in the brain stem contains an efferent and afferent component. The latter is found in the caudal solitary nucleus. Nonmyelinate input then travels to the hypothalamus, with several relays along the way.

C. The hypothalamus

- The paraventricular nucleus, responsible for synthesis of vasopressin and oxytocin

D. The amygdala

- Receives direct input from hypothalamus and modulates the activity of the hypothalamus; because the amygdala receives direct input from olfactory bulbs, smell is important factor.

- *This structure also contains receptors for female sex hormones*

E. Orbital Frontal Gyrus

- Considered the limbic portion of neocortex

- Receives viscal input from vagus and sympathetic

- *Uterine and inner vaginal representations in females.*