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The influence of the central nervous system in regeneration of an annelid worm.

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In a previous investigation, it was found that the Morgan and Nussbaum methods of operating worms resulted in a large mortality, excessive injury, retarded healing and little regeneration. The same results were obtained with the marine annelid worm *Amphinoma pacifica.*

By the method used successfully with *Lumbricus* 90 *Amphinomas* were operated in such a manner that the nerve cord was completely removed from 2 to 6 or more segments next the amputated level and with little or no injury to adjoining tissues. Over 151 worms served as controls.

Regeneration was limited to definite levels. Within these regions the head or the tail was regenerated in most of the worms, even though the nerve cord had been removed. On subsequent examination of serial sections it was found that in one group of worms, the nerve cord had regenerated from the broken end as far as the amputated level. Some of these worms had begun to proliferate new tissues, others showed no sign of proliferation. In a second large group, the regenerated nerve cord of the new head was continuous with the old nerve cord.

In a third group, the old nerve cord had grown a few ganglia towards the amputated level, the remaining segments were entirely devoid of nerve cord. Nevertheless the head had been regenerated with its typical supraesophageal ganglia or "brain," its commissures and even ventral nerve ganglion which grew posteriorly towards the old cord. This group demonstrated that *Amphinoma* as well as *Lumbricus*, and other adult organisms could regenerate the missing organ without the contact of or stimulation from the central nervous system.