Re: Squid brains & color changes

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From: r norman (*rsn__at__comcast.net*)
Date: 08/31/04

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On Tue, 31 Aug 2004 04:34:39 +0000 (UTC), hronkko@hytti.uku.fi (Henkka) wrote:

>Hi,
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>As the squid has been utilized much in neuroscientific studies, I
>wonder if something is known about how the brain controls the
>coloration of the skin. One might actually think that stimulating
>certain parts of the brain with electrodes would result in color
>changes. Of course it is possible that only the workings of individual
>neurons have been studied, as studying the organization of the squid
>brain probably isn't seen as useful as studying brains more similar to
>ours.
>
>Henri

There has been work on squid color control. Go to the US National Library of Medicine's PubMed at
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi
and search for "squid chromatophore control". You will get some very useful references. Look at any one of them and click on "related articles" to get a lot more.

The control of color pattern in squid and octopus is really quite astonishing. Also the brain of these cephalopod molluscs is quite elaborate and complex. The lack of work is not because it is not "useful" −− this is a fascinating problem that most comparative neurobiologists would love to investigate. One problem is that it is technically very difficult to work with these slimy, oozy animals that have no solid body parts to hold onto. Another is that "pattern of color" is a difficult concept to measure or describe. Arthropods and vertebrates, with rigid skeletons and with behavior that can be quantified in terms of specific angle of movement of discrete joints, are much easier to deal with.