applicable to men and women whose locks are fading are several facts. The rat, on which their effects were discovered, is used in diet experiments because he responds to foods so much like man does. A large part of our new knowledge of food and nutrition and vitamins for health was gained from rat experiments.

Skeptics may ask why, if certain food ingredients can prevent gray hair, so many men and women who follow a good diet nevertheless become gray. The answer to that, according to one scientist, who like the others refuses to be quoted, is that an excess amount of the anti-gray hair food ingredient might correct the condition even if lack of the food ingredient or vitamin was not the cause.

The explanation for this is that gray hair might be caused by cellular anoxemia, in other words a condition in which cells of the body are starved for oxygen to carry on their life functions. The cause of this oxygen starvation might not be vitamin lack. But vitamins might correct it. One of the B vitamins, B_1, for example, is known to help cells take up oxygen.

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GEOLOGY

Strange Reversible Currents Keep Ocean Canyons Clear

REVERSIBLE currents, changing direction every few hours, sweep in and out of deep submarine canyons off the southern California coast, it has been discovered by Prof. Francis P. Shepard, University of Illinois geologist now working at the Scripps Institution of Oceanography. These currents apparently do something to keep the canyons from filling up with sand and silt, but they are not strong enough to account for the cutting of the canyons themselves, Prof. Shepard believes.

Cause of the currents is still undetermined. They can hardly be tidal phenomena, for they reverse direction in anything from one to four hours, which has no discernible relation to tidal periodicity. Prof. Shepard conjectures that they may result from great oceanic eddies.

The canyon floors have been found to be practically free from mud where the canyon heads extend into the coast or near to the coast. On the other hand, muddy sediments at least ten feet in thickness have been discovered in canyons which terminate at a distance of a mile or more from the shore. This may indicate that the currents, weak as they are, are effective in the case of canyons which approach the coast. More likely, however, landslides along these canyons produce the effects.

The origin of these submarine canyons continues to be a puzzle. They have the same shape and arrangement as canyons cut by rivers on land. Rounded gravel has been dredged up out of some of them, to depths as great as 3,000 feet. This again suggests river action, for it is hardly likely that wave action would shape stones into rounded forms at that depth. Finally, some of the canyons have deltas, like those formed by rivers, at their outer ends.

The great depth at which some of the canyons have been found is one obstacle to ready acceptance of the theory of their formation by rivers on land and subsequent drowning in the sea. Regarding this, Prof. Shepard says:

"It is interesting to note that canyons are found off all sorts of coast quite regardless of the type of rock, of the violence of storms, width of continental shelf, etc. Nor do they show any relation to areas where the coasts are known to be unstable. This suggests but by no means proves that the sea level has been changing.

"However, the canyons extend so deep that it seems certain that if they are river-cut that there must have been more than sea level changes to account for them. My guess at present is that there have been a combination of processes of which sea level change due to much larger polar ice caps than have been normally supposed is the major contributing factor. Sea level changes of 2,000 to 3,000 feet may set up great strains in the earth's crust due to redistribution of weight and these strains may have caused emergence of the continental borders to a considerable degree. However, other factors no doubt combined to produce the curious submarine features."

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Children need the most food for their size when *babies* and when in their teens, nutritionists point out.

ENTOMOLOGY

Australian Ant Is Friend of Farmers

BERATED as pests though ants universally are, one species at least, the greenhead ant of Australia, has been proved to be decidedly the farmer's friend. Prof. H. B. Fell of the University of Edinburgh has reported on studies he made of a number of colonies of this ant during a recent visit in the southern continent.

The greenhead ant, unlike many other kinds of ants, is not a scavenger, but a hunter, preferring to catch his meat "on the hoof." A single colony, comprising only a few hundred individuals, was observed by Prof. Fell to bring in the following bag of game during one working day of 11 hours: 125 larvae of beetles, moths and flies, 22 small spiders and their kin, 16 termites, 14 flies, 7 small moths, 6 ichneumon flies and 5 red ants.

The food of the colony, on a percentage basis, ran as high as 77.5 per cent. of beetle, moth and fly larvae. One colony, Prof. Fell estimates, will destroy more than 45,000 harmful grubs in the course of a year.

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ENTOMOLOGY

Chinch Bugs Stopped By Paper Barriers

DEFENSE lines made of mere paper served Midwestern farmers better than concrete and steel served France, in this summer's battle with the uncountable hordes of chinch bugs that have been menacing the corn crop. Surveys of the situation by scientists of the U. S. Department of Agriculture indicate that the bugs have been licked.

In some parts of the Corn Belt the defenses consisted simply of an earth ditch and ridge, with a line of creosote poured along the crest of the ridge. More effective, however, was a four-inch strip of building paper, soaked in creosote, and half buried in the soil, leaving a two-inch wall to oppose the crawling masses of insects. This was the method favored in Iowa, where the outbreak has been worst.

The Bureau of Entomology and Plant Quarantine, in cooperation with State officials, distributed nearly two and one-half million gallons of creosote during the present season. Of this, more than half was used in Iowa.

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