bacteria within the platform.

Many of the organisms found to be living at the escarpment seep represent new species, but a number are closely related to those at the EPR. Unlike the EPR, the seep communities contain sea cucumbers but are devoid of brachyuran crabs.

In terms of the group's original geologic interest, "We found what we were looking for," says Paull. "These cliffs are being most intensely eroded at the base, which is exactly where we're finding these communities, and these two might be associated." The limestone cliffs could be eroded away, he thinks, by the acids given off when pyrite is formed. In addition, with so much biological activity, carbon dioxide, which also dissolves carbonates, will be produced. In support of these ideas, the researchers noted that the seep area was the only region along this and other escarpments that was not draped with a veneer of recent pelagic sediments, deposits of the carbonate remains of oceanic organisms. The limestones are also pitted, yellow and devoid of any iron-manganese crust, suggesting chemical erosion.

The researchers found evidence for sea life in four out of six dives. What's more, La Verne D. Kulm and Erwin Suess, marine geologists at Oregon State University in Corvallis, found yet another biological community in the subduction zone off the coast of Oregon in August. As in the Florida seeps, the important compounds in this community are not brought to the site by thermal processes. Unlike the seeps, the community appears to thrive on methane as the important energy source and nutrient.

"It looks as if there are many of these communities in a variety of settings that haven't been examined with this potential connection in mind," says Paull. Other places to look in the future include the escarpments along the Eastern Seaboard, northwest Australia and in the Mediterranean, as well as in underwater canyons near South America and South Africa.

— S. Weisburd

Early depression is a family affair

Recent surveys indicate that an increasing number of children and adolescents have severe types of depression. Yale University researchers now report that the immediate relatives of people who first became depressed early in life are at special risk; far more of them develop severe depression than do the relatives of people who had their first bout with depression in adulthood or who never had a psychiatric disorder.

The finding has important implications for clinicians and depression researchers, says study director Myrna M. Weissman. "If someone had an early onset of depression [before age 20], the clinician should be aware that many of that person's family members are probably also ill," she told SCIENCE NEWS. Also, investigators may have to redefine the early onset of depression in biological and family studies. Most studies set the cutoff for early depression at 40 years or younger, but the new data suggest the cutoff should be at 30 or 20 years, say the Yale researchers in the December ARCHIVES OF GENERAL PSYCHIATRY.

Even with the older cutoff, severe depression has been found to run in families, but the relationship appears to be particularly strong when someone first comes down with the disorder before age 20, says Weissman.

Severe or "major" depression is marked by a loss of interest in usually pleasurable events, appetite and sleep disturbances, feelings of hopelessness, inappropriate guilt and suicidal thoughts. Normal functioning comes to a virtual halt. The disorder tends to wax and wane during a person's lifetime.

In the Yale study, relatives of people who developed severe depression before the age of 20 had nearly four times the risk of also developing the disorder at any age, compared with relatives of normal subjects and relatives of subjects whose depression first appeared after age 40. In the same three groups, the odds were even greater that relatives of early-onset depressives would suffer from depression before age 20.

The family study included 133 subjects with major depression, 82 normal subjects and 1,518 first-degree relatives — parents, siblings and children no younger than 6 years old. Subjects and relatives were separated into four age groups: less than 20 years, 20 to 29 years, 30 to 39 years and over 40 years. Diagnoses were made by using reports from relatives, medical records and personal interviews when possible. A complex statistical analysis determined the incidence and risk of depression in each age group while controlling for the effects of several factors that may have influenced the results, such as sex and age of the sample, marital status of subjects and family size.

Although an onset of depression before the age of 20 was clearly associated with a much higher risk of depression among relatives, the study did not tease out the genetic and environmental causes of that association, cautions Weissman. "At this point, we can only say that the relatives of those who had an early onset of depression are far more vulnerable to the disorder," she says.

The investigators are planning a similar study with a larger sample. They may find, says Weissman, that some cases of severe depression in childhood and adolescence can be distinguished by the repeated attacks of overwhelming terror that are common in panic disorder. *—B. Bower*

Dynorphin aids stroke-stricken cats

Extra doses of a small protein messenger found naturally in the brain greatly improved the survival rate in cats following massive strokes and might one day play a therapeutic role in minimizing stroke damage in humans, report researchers at the University of California at San Francisco (UCSF).

The scientists caution that they are still several years from human testing of the synthetic version of dynorphin, one of the three classes of opiate-like compounds known to exist in the brain. Questions about the optimal dose and side effects, as well as its long-term effectiveness even in cats, they say, are still far from understood. But they cite the findings as further evidence that the natural opiates may influence how much damage is done when the brain loses part of its blood supply.

David Baskin, now at Baylor College of Medicine in Houston, worked with Yoshio Hosobuchi and others at UCSF in the study on cats published in the Dec. 6 NATURE. By blocking one of the main arteries that supplies the brain, the researchers induced strokes that normally affect 30 to 45 percent of the brain, particularly those areas that control sensation and movement. Six of 10 cats given continuous doses of dynorphin, beginning six hours after the stroke, were alive one week later, whereas none of the 12 animals given merely water, antibiotics and mechanical aid in breathing survived beyond 24 hours. Similar tests using only portions of the dynorphin molecule also failed to improve survival.

Surprisingly, when the scientists examined the cat brains, they found that the size of the area damaged by the loss of blood seemed to be approximately the same in treated and untreated animals, despite the fact that most of those receiving dynorphin showed much less functional damage. Hosobuchi speculates that dynorphin may have acted to keep the cats alive until other areas of the brain could take over lost function, although exactly how the substance is protective still needs to be determined. Dynorphin did not act on blood pressure or flow, or on the heart's rate or output. "It seems to be acting directly in the brain," Baskin says.

When it was first detected in brain cells in 1979, dynorphin was hailed as a potent analgesic (SN: 12/22-29/79, p. 423), but further research has shown that the substance is probably not a pain reliever itself, but acts instead to modulate the action of the other natural opiates — sometimes boosting and other times dampening their effects. Naloxone, a synthetic chemical thought to block the action of opiates, has shown mixed results in several years of study of its effect on stroke damage in animals. *—D. Franklin*