16,067 feet), the highest peak in Antarctica, at nearly 80° S. latitude. The ascent followed the original route pioneered by the Americans in 1966. However, given the almost continuous white-out conditions and extreme winds encountered while on the mountain, the traditional high camps employed by previous expeditions to Vinson could not be established. Thus, the climb was made by ascending over 6000 vertical feet on the summit day, which was accomplished in approximately 9 hours. Temperatures during the summit assault ranged from  $-20^{\circ}$ F to  $-40^{\circ}$ F and winds exceeded 50 mph. For Roach it was his seventh continent summit, thereby becoming only the third person to accomplish this feat. In addition to the ascent of Vinson, on December 7 fellow team members Yvon Chouinard and Doug Tompkins climbed a new route on the steep west face of Mount Shinn (4558 meters, 14,954 feet), Antarctica's third highest peak. This impressive climb likewise required a summit day ascent of over 6000 vertical feet, and was also done in extreme cold temperatures and high winds. Other members of the eight-man American team included expedition leader Dan Emmett, Dan Bass, Frank Morgan and Phil Trimble. The private group was flown to the western edge of the Sentinel Range aboard a twin-engine Otter piloted by Giles Kershaw. The 16-hour flight from the southern tip of South America took over four days to complete as the group was repeatedly forced to land on the Antarctic icecap to wait out marginal weather conditions. The flight was made possible by the use of three prearranged fuel caches provided by the Chilean Government, and the addition of an extra 250-gallon fuel tank which was located in the front of the passenger section of the tiny Otter. Happily, none of the expedition members are smokers.

## GLENN PORZAK

Altitude of Vinson Massif. The original elevation was established in the early 1960s by using photoalidade techniques based on altimeter elevations. At that time, the elevation was found to be 5140 meters or 16,863 feet. During the 1979-80 field season, a USGS team was again in the area for the purpose of obtaining geodetic data. Satellite Doppler positions were established for five stations. Elevations were also determined at those points and vertical angles were turned from them to Vinson Massif. Two of the angles were discarded from the solution because of possible false sightings. The vertical angles from the remaining three stations gave a mean elevation of 4897.3 meters or 16,067.2 feet. [Apparently the peak remains the highest in the group since other altitudes were based on the elevation of the Vinson Massif. The other altitudes will be 243 meters or 796 feet lower.—Editor.]

## JOHN A. KELMELIS, U.S. Geological Survey

Climbers on the Highest Point of Each Continent. It seems that reaching the highest point of each of the continents has become a North American specialty. The first to complete all of them was our member, Dick Bass, when he climbed Everest earlier in 1985. Two more have joined this group by climbing as the last