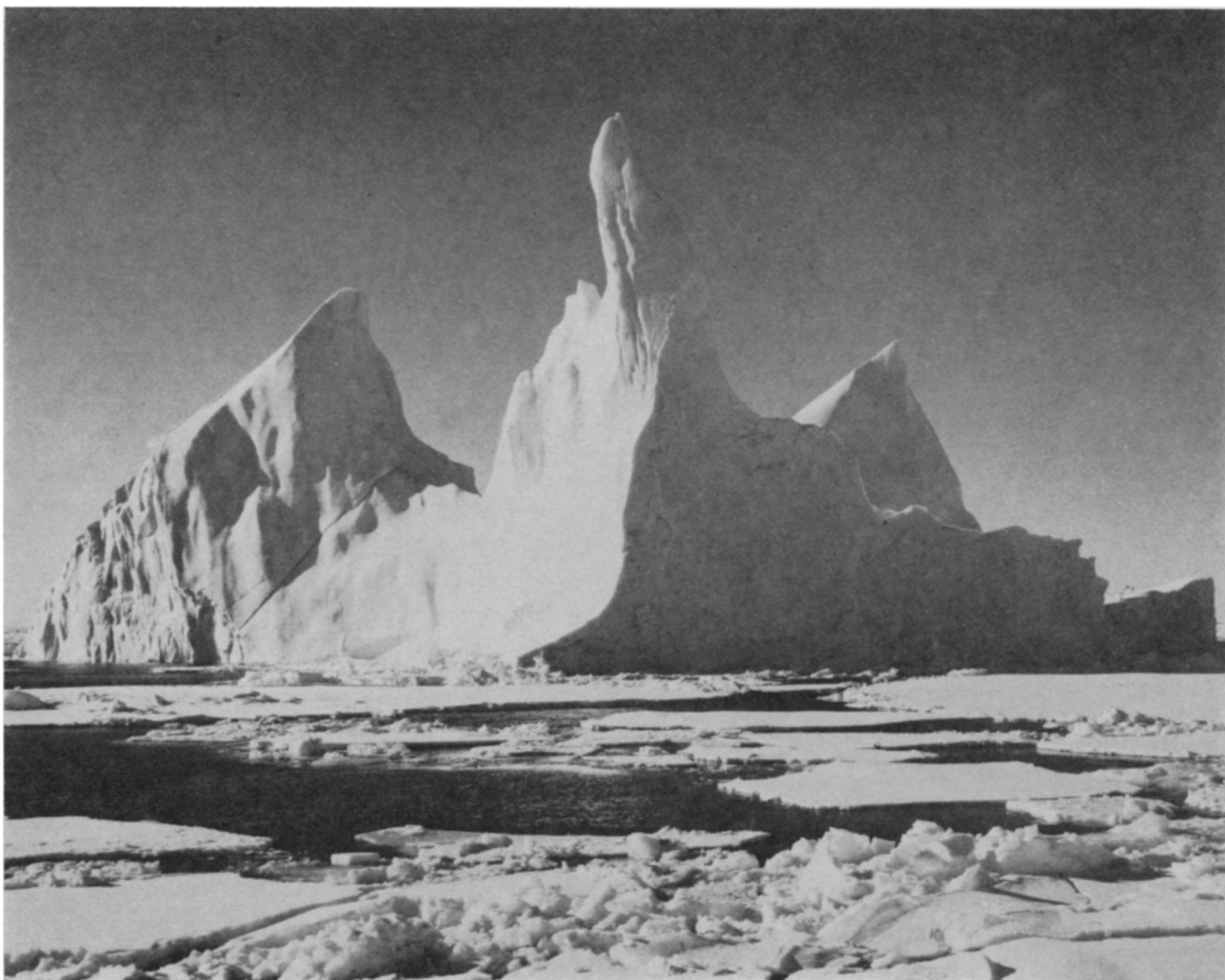


nature note



U. S. Coast Guard

Sea Ice

As winter begins to creep down from the North Pole, edging plants with slivers of ice and rime and coating fields with layers of snow, the great oceans and salty seas of the Northern Hemisphere start to stiffen and silently freeze.

As temperatures drop, the surface of the ocean begins to have an oily, opaque appearance, caused by the formation of tiny needles and thin plates of ice known as frazil crystals. These crystals increase in number until the top of the sea is slushy, like thick soup. As this slush thickens, it is broken by wind and waves into round pieces of ice with turned up edges, looking somewhat like lily pads or pancakes. They form in this shape because they are spun around by the wind and collide with each other. As temperatures continue to lower, they

gradually freeze together into large sheets of ice, sometimes many feet thick.

This frozen seawater is somewhat salty, but it gradually loses its salt and other impurities as they seep down in periods of rain or partial thawing, and leave fresh-water ice at the top.

There are two main kinds of sea ice—fast ice, which is immobile and remains fast to the land, and pack ice, which drifts with the tide, wind and current. Different sizes of pack formations have been named by scientists studying the nature of ice. A brash is only six feet long, the size of a pool table. In ascending order these are a block, a medium floe, a giant floe and a field, which is longer than five miles. Ice islands, some 18 miles long, sometimes drift around and around the North Pole in the Arctic current for

years with practically no change in size or shape. With flat tops on which airplanes can land, these islands are often used for research stations. The United States and Russia both maintain ice island stations conducting research in glaciology, oceanography, meteorology, marine biology and other fields.

The great icebergs are not true sea ice, although they occur on the sea, causing much danger to ships. These are broken off in giant chunks from the glaciers, slow-flowing rivers of ice moving over land toward the sea. As winter spreads throughout the Northern Hemisphere, these icebergs become more “locked up” with the cold, and their numbers decrease. In the Southern Hemisphere, however, where spring warmth is just beginning to come, icebergs break off from Antarctic ice shelves with great splashes.

16 december 1967/vol. 92/science news/597