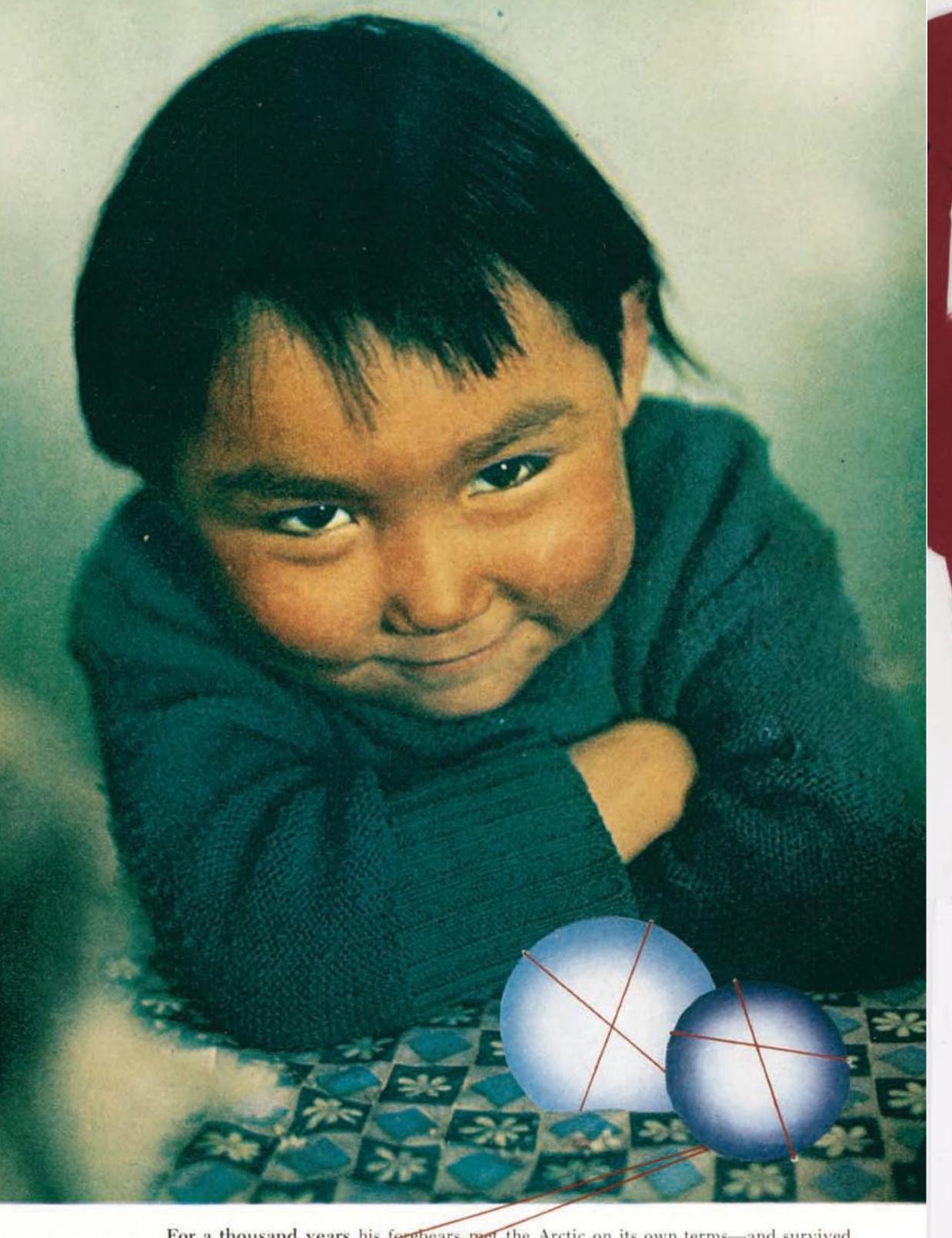






Aftermath of the hunt: Villagers of Barrow, Alaska, wielding long flensing tools, slice blubber from a bowhead whale they have just landed. Discarding much of the carcass,



For a thousand years his forebears met the Arctic on its own terms—and survived. To prevail over the new challenges that lie ahead, this child of a hunter in Siorapaluk will need all the pluck and pride that shine from his young eyes.







damaged anemone will discard it if it finds a whole one of the preferred type. It uses the anemones as weapons. Threaten a grenadier crab and it will turn toward you and wave its anemones in your direction. If you come close enough, the anemones will sting you. The weapons are very effective.

What benefit the anemone derives from all this is uncertain, because the crab also steals food from its companion. It will 'groom' its anemones, with its walking-feeding legs, removing small particles that cling to their surfaces and eating any that are edible, but it will also try to take food in the vicinity of the anemone and even to remove food from the tentacles after the anemone has caught it.

Team work of the highest order, however, is found further down the evolutionary scale among animals much simpler, or apparently so, than the crabs.

Sponges are animals, the simplest of all multicelled animals. As adults they are incapable of movement, but grow 'branches', and for this reason they were thought to be plants until closer observation of them in the eighteenth century revealed characteristics that are clearly animal, but different from the characteristics of any other group of animals. Sponges have existed for more than a billion years, but no other animals have evolved from them and they have no close relatives. They have no internal organs: no mouth, no gut, no nervous system, but are organized around a system of canals through which water passes, food particles being filtered from it and waste products added.

The origin of sponges is obscure, but one theory holds that they are derived from colonies of single-celled protozoa. The cells of which a sponge is composed perform specialist tasks, but they remain relatively independent and most of them are able to live alone. This gives the sponges remarkable regenerative powers, which can be demonstrated by passing one through a silk screen. The screen breaks the animal into minute fragments. If conditions are suitable, these fragments will recombine to form several new sponges, each individual cell moving to the position relative to the others which it occupied in the original sponge. Sponges are cultured by cutting a living sponge to pieces, attaching the pieces to blocks of concrete, and placing them in the sea to regenerate.

It seems likely, then, that a sponge is not so much an animal as a colony of single-celled, amoeba-like individuals that work together, each individual an ecializing for a role in the community. Some of these cells, known as 'archeocytes', are able to form other types of cells as these are needed.

There is no doubt whatever that the siphanophorans consist of sach 'colonies. The best-known member of the order Siphanophora is *Physalia*; the Portuguese man o' war, whose tentacles may extend for several metres below the surface on which the colony floats, and can deliver a painful, even dangerous, sting.

The colony consists of hydras, animals that may exist as medusae, as polyps, or as both, at different stages in their life cycles. The medusa is a free-swimming animal shaped like an umbrella. Its mouth is situated at the centre of the concave underside and tentacles hang from the rim of the ambrella. We recognize the semi-transparent, soft-bodied medusae as jellyfish. The polyp consists of a tube, anchored by its base to a solid surface and with a mouth, surrounded by about five tentacles, at the outer end. The surface layers of both types of hydra, and especially the tentacles, contain enidocytes, cells unique to the phylum *Caidaria*, to which all these animals belong. The enidocytes carry the stinging apparatus, in the form of nematocysts; there are several types of these, but they consist essentially of a thread-like tube, often barbed, that in some species contains a poison. The nematocyst is discharged explosively upon receipt of an appropriate stimulus, either completely or with one end still attached to the hydra, and its purpose is to capture food. All hydra are carnivores, and their nematocysts either entangle the







