

Technology and Social Change

Second Edition

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As in the case of overpopulation on Mauritius discussed by Burton Benedict, the major technological impact was a fait accompli by the time Dr. Bernard arrived on Kalymnos. The synthetic sponge had already taken its toll of the natural-sponge markets, and Kalymnians were well into the process of adapting to the new situation. In this essay Bernard deals with the history of sponge fishing, the role of technology in the industry, and the social effects on a "monocrop" island when synthetics threatened its primary economic base. The case is interesting as an example of a widespread phenomenon. It is not a government program ; it is not a new city or dam or other major project ; it is not the sort of thing Robbins and Kilbride describe where people have access to microtechnology that they perceive as beneficial to their lives. Instead, 8,000 miles from Kalymnos a synthetic substitute was invented which threatened the livelihoods of people who worked with the natural counterpart. Here the product is sponge. It might have been nylon and its effect on the silkworm industry, or plastic buttons and their effect on the mother-of-pearl industry, or nuclear power and its effect on the Appalachian coal industry. On Kalymnos the fight to stay in the world's markets has led to a strategy which may prove effective in other areas : technology is being rolled back, and ancient, less expensive modes of production are being reinstated. The same thing may well happen to snowmobiles if it turns out that they cost more than their fun value is worth.



SPONGE FISHING AND TECHNOLOGICAL CHANGE IN GREECE¹

H. Russell Bernard

INTRODUCTION

The most striking thing about Kalymnos has for a long time been its sponge-fishing industry. The most striking thing about this island today is the apparent strength of its economy and the survival of the sponge industry against massive competition from synthetics.

This chapter discusses what happened on Kalymnos. Briefly, historical, political, cultural, technological, and economic factors combined in the period from 1800 to 1960 to make Kalymnos the undisputed world center of sponge fishing. Beginning around 1960, the threats of synthetic sponge

¹ Field work was carried out on Kalymnos for one year, 1964–1965, two weeks of December, 1966, and on several field trips during the year 1969–1970. Field work at Tarpon Springs consisted of several months during the summers of 1963 and 1964. Research has been supported at various times by the National Defense Education Act, Social Science Research Council, University of Illinois, Wenner Gren Foundation, and Fulbright Foundation; these institutions' support is gratefully acknowledged. Thanks to Dr. Robert Littlewood and Dr. Henry Irwin of Washington State University for criticisms of earlier drafts.

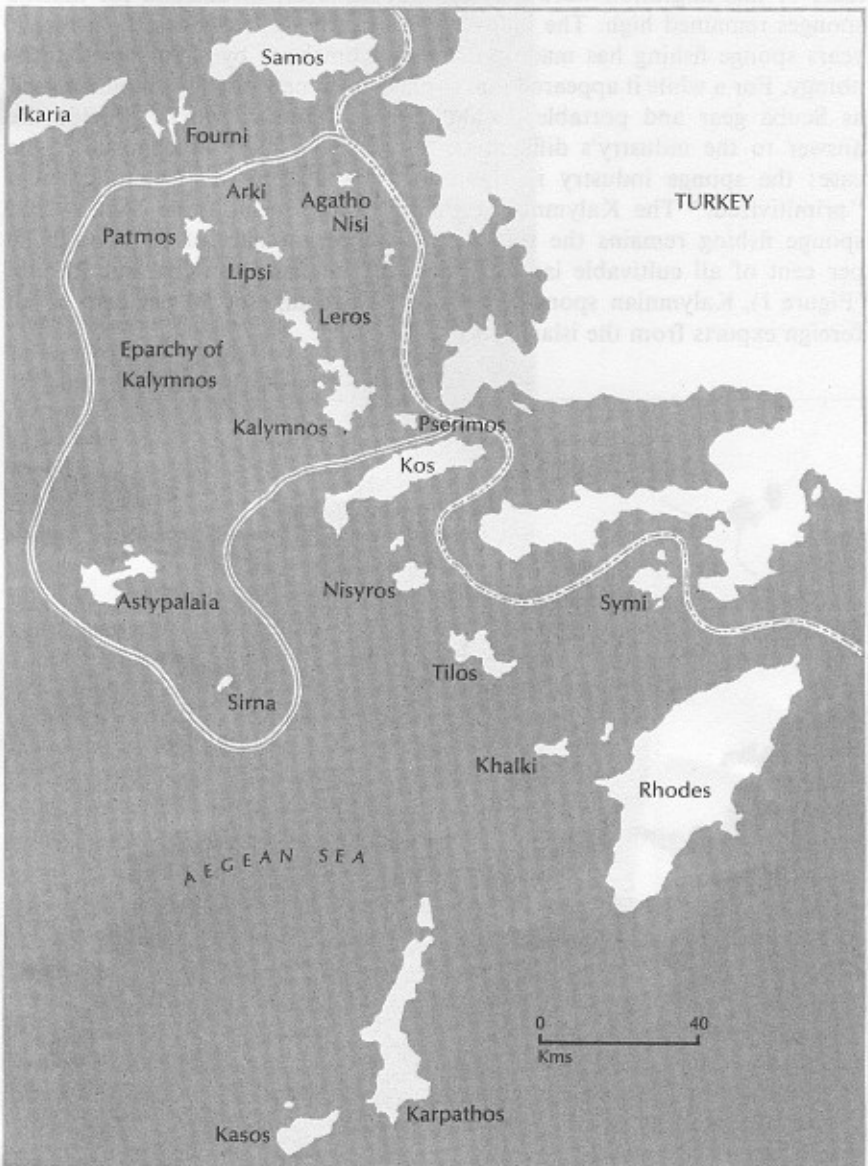


FIGURE 1. The Dodecanese.

competition caused a major labor migration. This led to a decline of importance of the sponge industry in the Kalymnian economy. The causative fears of this migration were not realized, however, as demand for marine sponges remained high. The industry thus nearly destroyed itself. In recent years sponge fishing has made a dramatic comeback by changing its technology. For a while it appeared that sophisticated new diving equipment such as Scuba gear and portable decompression chambers would provide the answer to the industry's difficulties. Surprisingly, just the opposite is the case: the sponge industry is vigorous again because its technology was "primitivized." The Kalymnian economy today seems quite healthy and sponge fishing remains the single most important part of it. Though 85 per cent of all cultivable land in the Dodecanese is on Kos and Rhodes (Figure 1), Kalymnian sponge continues to account for 90 per cent of all foreign exports from the island group.

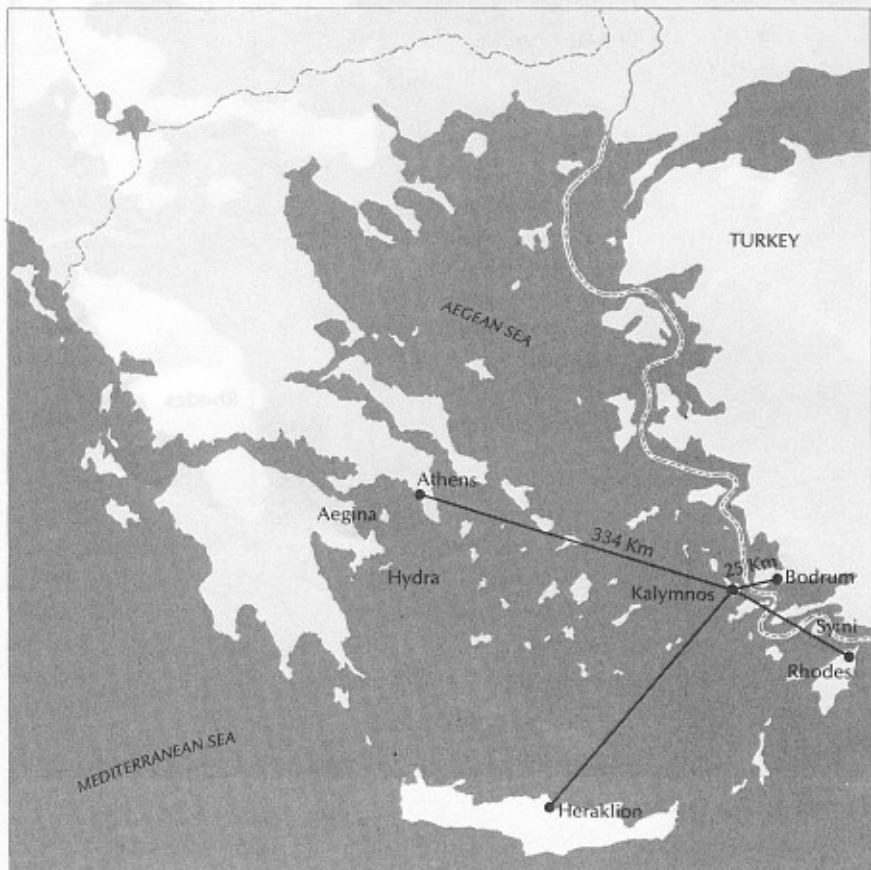


FIGURE 2. Greece.

SETTING AND HISTORY

Kalymnos is 110 square kilometers of mostly rocky land, located 332 kilometers southeast of Athens, 145 kilometers northwest of Rhodes, and 25 kilometers west of Bodrum, Turkey (Figure 2). Only 18 per cent of the island is arable and most of the good land is too steep to be really productive. Still, slightly over 13,000 people inhabit Kalymnos, making it the most densely populated island in Greece.

The coastline is jagged and steep, and the island is cut lengthwise by three mountain ranges and two valleys. The port city of Pothea has nearly 10,000 inhabitants, making it an "urban area" according to the National Statistical Service of Greece. Xora, a short kilometer and a half from Pothea, has another 2,000 people. Perhaps 100 families (3 per cent of the total population) are engaged in agriculture; a like number make their primary income from shepherding. There are around 10,000 sheep and goats in the villages of Vathy, Dassos, Bothinous, Arginonda, Skalia, Emborios, Palionisi, Argos, and the islets of Telendos and Pserimos (Figure 3).

Most men in Pothea are engaged in commerce, trade, professions, or services (Table 1). But the principal adaptation of Kalymnos is to the sea which surrounds it. In ancient times Kalymnos sent her best youth for training in the Rhodian navy. The neighboring island of Kos, with its lush, flat lands, provided Kalymnos with most of its summer fruits and vegetables. It still does, and Kalymnians call the people of Kos *Kotes*, or chickens, to show their disdain for people who are tied to the land. One informant told me, "The ancients said that the three most terrible things in the world are fire, woman, and the sea. Man must do battle with all three to be strong. We have." The prowess of *Kotes* as firefighters was never established during my stay on Kalymnos. Needless to say, however, Kalymnians do not rate *Kotes* very high as mariners or lovers.

The impact of the sea on Kalymnos is profound. In 1965 I estimated at least 1,000 adult males were engaged locally in octopus fishing, commercial deep-sea fishing, and sponge fishing. Roughly 300 more were abroad in the Greek merchant marine. Another 50 to 100 men, depending on the season, worked in drydock and repair facilities. In all, about one third of the male work force, ages twenty to sixty-four, was active in sea trades. The most important of these was sponge fishing.

The exact date when Kalymnians began fishing for sponges is lost in antiquity, but there can be no doubt that it has been the mark of the island for centuries. When Suleiman II captured the Dodecanese in 1521, the Kalymnian surrender was marked by the sending of sponges and loaves of fine white bread. The symbolism of this gift, it is said, was not lost on the Sultan: Kalymnians neither grow grain, nor are they poor; they fish for sponges and buy only the best flour (Myres, 1944). The Sultan was obviously impressed; he granted Kalymnians unlimited use of the mainland for the

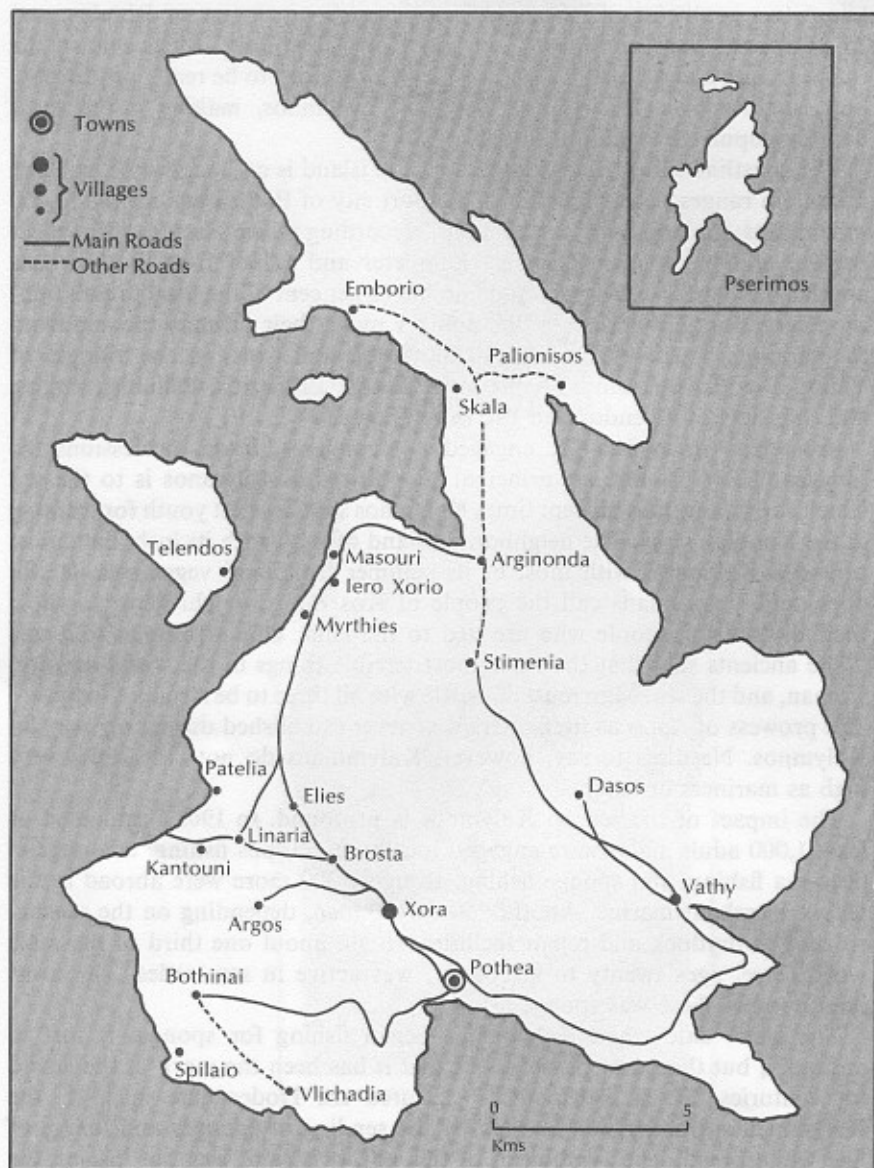


FIGURE 3. Kalymnos.

Table 1
 Surveys of Artisans and Shops on Kalymnos*

Coffee grinders	2
Knitting shops	3
Furniture makers	8
Cobblers	25
Machine shops	8
Contractors	4
Mosaic works	1
Electrical repair	3
Sweet shops	9
Tailors	8
Woodworkers	13
Bakeries	11
Metal-working shops	7
Soap makers	1
Appliance sales	3
Lamp makers	2
Distillers	9 (including tavern owners)
Paint shops	3
Paint makers	1
Salt grinder	3
Tanners	5 (including one chamois factory)
Blanket makers	1
Meat shops	9 (including three frozen-meat stores)
Floor makers	4
Weavers	2
Ships ways	2
Jewelry shops	5
Goldsmiths	3
Ice makers	1
Wine shops	2
Auto repair	2
Auto rental	1
Motorcycle sales	2
Watchmakers	4
Barbers	15
Sugar refineries	1
Rug makers	1
Dry cleaners	2
Kerchief makers	1
Spice packaging	1
Restaurants	14
Movie theaters	4 (two summer and two winter)
Hotels	6 (accommodating 350 persons, excluding rooms for tourists and traveling salesmen)
Sponge merchants	50

* Source: Chamber of Commerce, Kalymnos (1964).

