

paper mounted on a slowly rotating drum. So long as the system is at rest the pencil of light writes a straight line on the paper. But when a stress bends or displaces the support of one of the reflectors, the beam of light is correspondingly displaced, so that the line traced on the photographic paper becomes a curve, accurately recording the degree of bending and hence the force exerted at that point. A timing device, which splits time up into thousandths of a second, makes its record on the same sheet of paper.

The optical parts of the stress recorder total less than an ounce in weight, and models of the essential structural units of a steel building can be kept down to a few feet in height and a weight of a hundred pounds, so that the entire arrangement can easily be mounted on a "shaking table" which will simulate under laboratory conditions any type of earthquake whose effects on structure it is desired to study.

The stress recorder constitutes a simple mechanical shortcut to results previously obtainable only by the most tedious and long-drawn-out kind of labor with slide-rule and calculating machine; and some of the results obtainable with it represent the integration of forces so complex that their mathematical calculation by ordinary means is not possible at all.

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Specialization is nothing new in industry: Roman writers tell of workmen who made only parts of statues, or certain garments for the clothing trade.

MEDICAL ECONOMICS

## Medical Service Regarded As Social Necessity

### State Medicine Seen Unless Doctor's Service is Socialized; Physicians Badly Distributed in Cities as Well as in Country

"A REFUSAL to socialize medical service is to ride directly into the storm of state medicine."

This terse statement of the probable "violent reaction" of the public to the "entrenched stubbornness" of some of the leaders of the medical profession was made by Dr. James H. S. Bossard, professor of sociology at the University of Pennsylvania. Dr. Bossard opened a conference on the medical profession and the public held in Philadelphia under the joint auspices of the College of Physicians of Philadelphia and the American Academy of Political and Social Science.

The public has come to regard health and adequate medical service as a social necessity and even as a social right along with protection against criminals and the guarantee of property rights, Dr. Bossard pointed out. This has resulted from the health service given to children in schools, to the fighting forces during the World War, to the war veterans and industrial employees.

Whether this new attitude toward health and medical service is right and

justified, Dr. Bossard refused to say. However, it must be faced as a fact, he declared.

The part the medical profession has played in giving adequate service, often without any remuneration, and in developing methods of protecting the health of individuals and communities alike was not minimized by Dr. Bossard. He merely pointed out that the new attitude exists and conflicts with the interests and conceptions of many private physicians.

Another factor in the conflict which particularly strikes the sociologist as he looks at the doctor is the spatial distribution of physicians' services. Not only is there a dearth of doctors in the rural areas, but even in cities they are badly distributed among the population. For example, in Philadelphia one-fourth of the doctors have their offices in the down-town and business sections. This gives a ratio of one doctor's office to every 29 persons.

In outlying, more thickly populated sections the doctors are fewer. In South Philadelphia, where one finds nearly one-fifth of the city's population, there is one doctor's office for every 1,166 inhabitants. In Kensington and Frankford, containing over a fifth of the population, there is one doctor's office for every 1,216 inhabitants, and in southwest Philadelphia, there is one office for every 1,910 persons.

"Socially speaking, medical service is most needed in poorer areas; professionally, it is natural and inevitable for doctors to follow their paying patients," Dr. Bossard observed.

One result of this, however, has been the growth of free and part-pay clinics in hospitals. Hospitals cannot move as readily as physicians can move their offices. Left behind in the poorer and congested areas, the hospitals have organized medical services for their neighborhoods. This has led to conflict between hospitals as health centers and interests of privately practising physicians.

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LABORATORY EARTHQUAKES SHAKE MODEL

Mr. Ruge is adjusting his stress recorder which measures stresses in models of building frames as they are shaken artificially. The two uprights with half-round weights represent the frame.