A clue to understanding the causes of a certain form of throat cancer may be found in the semi-desert stretches of Iran near the Caspian Sea, an area with a particular character of its own. What may be discovered here will perhaps point the way to other answers in the complex web of cancer riddles, for the investigators are looking for more than an answer to a thorny question and hope to develop a technique of epidemiology that could be applied to understanding cancer in quite different situations.

In the beginning there was a tantalizing fact. Along the northern coast of Iran, on the Caspian Sea, lie three regions with very different climates and life patterns. The first region is heavily forested, well-watered land where the main crops are tea and rice. Further east up the coast lies an intermediate region where there is some rainfall and cotton fields predominate, although there are a variety of activities including tourism and fishing. Finally, slightly inland from the coast, lies a semi-desert region, a region of camels and thirst, of poverty and nomadic huts. Three regions, only a short distance apart; three ways of life, three climates and soils, three strikingly different patterns of throat cancer. Throat cancer is the term commonly used to describe what is really oesophageal cancer, the oesophagus being the tube which connects the mouth to the stomach.

**Miracle Herb for Cancer**

A wild herb "podophyllum emodi" seen in the higher altitudes of Pitthoragarh District in Uttar Pradesh has been found to have "great potencies" for curing cancer as a result of researches carried out by a Swiss pharmaceutical firm. The herb is also found in the Alps.

According to the report the herb is being grown at higher altitudes by Government horticultural farms. The difficulty about the growth of the herb is that it takes 12 years to complete its life cycle and mature.

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**The Riddle of Three Landscapes—Iran**

*by Nedd Willard*

The question seeking an answer is, why? To find out, a start was made on this problem by a joint team in the summer of 1968. Dr. Ezat Mahboubi, of the Institute of Public Health in Teheran, organized a Cancer Registry in the spring of 1968 as part of a joint research agreement with the International Agency for Research on Cancer. Dr. Janze Kmet, a staff member of this Agency, which was created by WHO, works closely with a team of physicians and technicians who permanently scan the Caspian Littoral collecting all available information from local doctors. The research base is in Babol, in the Field Research Station which has been given for the study by the Institute of Public Health Research.

Dr. Kmet hopes, by studying the physical, biotic and cultural characteristics of the Caspian Littoral, to discover new techniques for understanding the environmental factors in cancer. The region chosen in Iran has many unique advantages. Within a small distance, there are striking changes in climate and soil; Dr. Kmet strongly suspects that the humidity of the climate and the salinity of the soil play a part, but before incriminating one or two factors, many others must first be examined and acquitted. The scalding tea theory is a case in point.

So many things are involved that finding the factors responsible for human cancer requires long efforts in various disciplines. The way of life—a vague term—can be broken down into a thousand component parts, any one of which may be important.

What do people eat? Everything which is eaten must be scrutinized and compared with the diets of people nearby where the cancer pattern is different. So far, there seems to be little variation in the kind of food eaten in the different regions.

Finally, the place itself, the climate and the soil on which the community lives and from which it draws its sustenance has to be studied. According to Dr. Kmet, the evidence collected so far seems to suggest that low rainfall and high salinity in the soil are casually related to the cancer problem.

**Working hypothesis**

A geographical concordance between humidity and salinity of the soil on the one hand, and the distribution of throat cancer on the other, has been clearly shown, but it may be coincidental. Where there are saline types of soil there is a high incidence of this disease, at least in the vast areas of central Asia. These findings fit generally well with the high incidence of throat cancer on the Iranian plateau. The findings in Kazakhsthan in the USSR support the hypothesis of a casual relation, since the border between saline soil types in the coastal areas and non-saline soils in the forest and chernozem districts north and west of the northern shores of the Caspian Sea is a disease dividing-line similar to those found in Iran; throat-cancer incidence is very high in the Ghoriev district and much lower on the southern slopes of the Ural mountains and in the central Russian plains. There seems to be very high incidence of throat cancer in Uzbekistan and Kazakhsthan in the areas adjacent to large saline water surfaces such as Lake Balkhash and the Aral Sea. On the other hand, when one proceeds from Lake Balkhash towards the Tien Shan mountain range, the incidence seems to decrease sharply. Something similar has also been noted in Kenya, but there the differences are less clear-cut.

(Contd. on p. 128)