

1. History

The centre was founded by the Dr. Jonas Kristjansson, (born in 1870, district partitioner and surgeon in Iceland). Doctor Jonas Kristjansson studied the role of food on man's health and after a journey to the United States, created in 1938 at Reykjavik the "Natural Health Society of Iceland" and opened in the capital a treatment center using the bath, in particular for rheumatic patients and those with skin ailments. The company later opened other centers in the country. The center at Hveragerdi was opened in 1955.

2. Installation - Material

The Hveragerdi natural cure sanatorium functions as a center with hospitalization. Its present capacity is 120 beds in winter and 140 in summer. A new establishment is at present being constructed

The medical installations comprise the baths (individual and swimming pools), showers, mud baths (in baths), physiotherapy rooms, massage booths, saunas and re-education rooms. Special installations permit the application of underwater showers.

3. The Cure

The cure relies on diverse elements:

- The Diet: lacto-vegetarian diet (part of the vegetables is produced organically in hot houses on the spot without the use of chemical fertilizers)
- Hygienic Living; exercise or re-education cure, suppression of tobacco, coffee, tea, etc.
- The use of mineral waters (only externally)
- The use of muds (collected several kilometres from the establishment and incubated in the mineral water before use).

The "thermal cure" portion of the treatment practiced at the Hveragerdi center would appear to be of secondary importance. In effect, it would appear that the "dietary" aspect of the cure is that most relied on by the main consultant of the establishment. The use of the mineral water and mud is above all considered as "Physical Medicine", the role of the temperature of the applications being judged more important than the specific therapeutic activity of the mineral water.

4. The Indications

The therapeutic uses of the cure appear fairly widespread and can be summarized thus:

- Osteo-articular ailments (rheumatism and after-effects of traumatisms)
- Neurological ailments (especially with motory repercussion)
- Obesity
- Arterial hypertension
- Cutaneous and digestive problems.

Only the first two uses would appear to benefit from the use of the mineral waters and muds.

5. Functioning

The Hveragerdi sanatorium, well installed, receives patients whose cure is paid for by the national social security system (at least the major portion thereof).

The success of the sanatorium appears great: a waiting list exists permanently of about 1,000 patients. Admission is made on examination of the file and the waiting period varies according to the cases.

The cure lasts an average of four weeks and the average age of the patients is approximately 60 years.

6. Conclusion

The success encountered by this establishment is thus important because it shows that this type of treatment meets with a certain public favor and that there is not systematic opposition on the part of the Icelandic medical profession to medical hydrology.

It must be, nevertheless, underlined that the cure is not, in its totality, presented as essentially being a thermal one, but rather as a dietetic and health cure.

III. THE DEVELOPMENT OF THERMALISM IN ICELAND

A. The Possibilities of Development

Several points spring from the study reported in the first two chapters:

- Iceland is rich in mineral waters of various types,
- These waters are similar to those of springs already used for medical purposes in other countries.

One can therefore envisage that the medical use of these waters is possible. However, the specificity of the Icelandic thermalism cannot be determined by the nature of the mineral waters alone.

As was stated in the first chapter, the thermal cure is a complex therapeutic whole in which the use of mineral water is but one of the elements. One can, therefore, envisage that it is in the other elements that an eventual specificity of the Icelandic thermalism can be found, at least as far as its international aspect is concerned.

The use of these springs presupposes that all of these factors should be taken into consideration, i. e. :

not only the works for the catchment of the springs to be used and the appropriate medical installations (baths, showers, etc.),

but equally the other elements, such as location, environment, non-thermal care (sauna or dry massage for example) and entertainment.

It is, in short, evident that in this general conception of the creation of thermal resorts, the problems, especially as far as the elements other than the use of mineral water are concerned, will be different according to the type of clientele likely to frequent the resorts.

It is therefore fitting to distinguish between two very different cases: that of a local utilization, i. e., for the Icelandic clientele,

and that of a use at an international level. These two cases merit separate consideration.

1. Development of Thermal Resorts Destined for the Icelandic Population

The development of thermal resorts directed towards the Icelandic population appears very interesting and must correspond to several choices.

a) Choice of the Use

We are talking of medical treatment establishments and in consequence, each one of these must correspond to precise medical use.

The large variety of the Icelandic mineral waters enables, from the beginning, consideration of the building of varied centers, adapted to diverse therapeutic purposes. However, the size of the total population obviously does not justify the opening of numerous thermal cure centers.

It would therefore appear logical from this point of view to envisage the creation of establishments corresponding to two main aims:

on the one hand to have a predominant medical use which should be determined as a function of the state of health of the population and the most frequent illnesses leading to partial or permanent invalidity,

on the other hand to possess a certain polyvalence permitting the admission, side-by-side with the patients for the predominant medical use, other patients with other illnesses.

Only the Icelandic Ministry of Health is capable of determining these orientations using the information which it possesses. It is nevertheless probable that as in many other countries, the dominant use will be one in the domain of osteo-articular illnesses, i. e., rheumatics and the sequel of osseous trauma.

These illnesses lend themselves particularly well to thermal treatment and this all the more as the cure must include a motory reeducation, which necessitates the use of swimming pools. It would appear in this case that the establishments to be created would logically be linked with physical medicine, which already exists in Iceland.

As far as the composition of the springs is concerned, the treatment of osteo-articular illnesses is above all practiced in the hypomineralized resorts (such as Aix-Les-Bains in France) or weakly sodium chlorinated resorts (such as Bourbonne-Les-Bains) also in France). These types of water are greatly represented in Iceland. To this must be added the interesting role which the radioactivity plays on the painful phenomena accompanying these illnesses. These measures merit being practiced on the waters of the Icelandic springs. Finally, the use of muds could very advantageously complete these thermal techniques. These muds obtained by the incubation of an organic element (peat for example) in the mineral water, are already used in the Hveragerdi sanatorium, and could without any major difficulties be used equally in future establishments.

It would be possible to complement this with facilities for cardio-vascular illnesses and certain diseases of the respiratory passages.

b) Choice of Location

The choice of location of these thermal establishments for the Icelandic population depends, of course, on the composition of the mineral water spring. Nevertheless, as was seen in the second part, the number of springs and their variety permits without any doubt a very large geographical choice in the interior of the country.

This choice must take into consideration other elements, and in particular, the possibility of a convenient frequentation by the patients. That signifies that in practice a thermal establishment must be located near to a sufficiently important zone of population, so as to limit to some degree the displacement of the patients.

In this connection, it would appear logical to foresee a care establishment in the south-western part of the country (region of the capital, i. e. , in a radius of one hundred Kms around it) and another

in the north-eastern part which could accommodate the population of the northern and eastern sides of the country.

c) Choice of the Type of Establishment

The choice of the type of establishment must permit the realization of an autonomous center comprising the treatment section as well as the lodging and distraction sections.

In this sense, the Hveragerdi sanatorium appears well adapted to these purposes and the new establishments could be derived perfectly from this model. In particular, a low-rise building construction is suitable for physically handicapped patients. A minimum distance must be foreseen between the lodging and treatment buildings, which in practice gives rise to a star-shaped configuration, the treatment building being in the center and the lodging and other buildings being positioned radially.

If these establishments are destined to receive patients who are more or less gravely afflicted, it is important that a close organic liaison should be created between each one of them and a hospital center, which permits eventually the carrying out of certain supplementary examinations. It would, therefore, be useful, administratively, that these thermal establishments should not be totally autonomous, but rather representing advanced sectors of a regional hospital (or district). Such an arrangement has been realized in Japan where each one of the university balneology centers is attached to a large hospital center, sometimes more than 50 km away. This arrangement permits the moving of the patients and also the possibility of having, from time to time in the thermal center, specialized consultations which are carried out by the doctors of the attached hospital center.

The exact composition of the treatment units can obviously only be determined after the choice of the medical uses has been made. It is, however, fitting to think that such a center should only be composed of 100 to 200 beds as a maximum, which is sufficient given the importance of the treatments and of the necessary personnel.

2. Development of Thermal Resorts Destined for an International Clientele

The same choices are offered in the case of an international establishment, but the solution must obviously be adapted to this particular purpose.

a) Choice of the Use

It is difficult to envisage an Icelandic thermal resort receiving foreign patients whose illness involves too great a physical invalidity. There would, therefore, appear to be little hope of treating osteo-articular illnesses in an international resort, as was previously envisaged for the establishments destined for the local population.

It would appear to be more logical that the use should be in the domain of pathology, interesting to an important number of patients.

It is necessary that the characteristics of the Icelandic thermal cure, that is to say the elements other than those relative to the use of the mineral water, can play an important role in the treatment of the illnesses involved.

For these diverse reasons, it would be logical to choose as the medical uses for these international establishments, illnesses relevant to the metabolism, and in particular:

the hypercholesterolemia,

obesity,

gout,

which respond well to the diverse criteria of the preceding choice.

One could add as a secondary use:

the allergic illnesses,

in particular, those affecting the respiratory system.

Thermally speaking, these uses are perfectly compatible with the nature of the Icelandic mineral waters.

It is in effect necessary for these therapies to use, in particular, a drinking cure for which only the feebly mineralized waters can be used.

From the point of view of composition, the sulphated and the bicarbonated waters are the most interesting; they are very numerous in Iceland.

Finally, the factors of diet, climate, and exercise play an important role in the treatment, and all of these factors can contribute to give a distinctive image to Icelandic thermalism.

One can, medically speaking, reproach the Icelandic waters for being fairly rich in sodium, which is an inconvenience for the treatment of obesity. This objection is not, however, too serious, given the feeble mineralization which allows the easy compensation of this element by the use of a sodium free diet.

b) Choice of Location

Only one establishment of this type can be reasonably envisaged in Iceland.

Its situation must be related to two essential criteria:

on the one hand, a relative proximity to the international airport in order to reduce the problems of transporting patients who are arriving or departing;

on the other hand, to be situated in an area so as to obtain the maximum benefit from the very particular Icelandic scenery.

It must be noted on this point that the principal characteristics of this scenery are its naturalness (non polluted) and wildness. It is, therefore, necessary to preserve these characteristics by avoiding too great a development around the establishment, which could

destroy them. One must take account of the fact that many of the patients will be more tempted by excursions by minibus or minor roads (or by outings on horseback), than by excursions in air-conditioned coaches on the major paved roads.

c) Choice of the Type of Establishment

The international establishment must also reunite the treatment, lodging and entertainment units.

For the treatment, it is not only necessary to make provision for the classical techniques of the use of mineral water (baths, showers, mineral water bars), but also annexed techniques (sauna, vapour baths, massage, etc.) such as were mentioned in the first chapter. Equally within this treatment unit, complementary items (gymnasium and rest rooms) must be provided.

As far as lodging is concerned, the hotel part must, of course, be adapted to the class of patient expected. This could be located in the same buildings as the treatment unit (where the medical area represents one or two floors) or in a separate building. In the latter case, it is necessary that the two buildings be directly connected by heated corridors so as to allow the patients to go from their bedrooms to the treatment zone in dressing gowns. These should be provided by the hotel and this arrangement allows the patients to return directly to their bedrooms after the treatment, to rest there. This reduces the number of rest rooms necessary in the treatment unit.

We must remember that the lodging area also comprises the eating area and that it is indispensable that the diets can be prepared there and adapted to the different types of patients.

As far as entertainment is concerned, it is of interest to take advantage as much as possible of the possibilities offered by Iceland. For example, a heated outdoor swimming pool is an interesting attraction. It is nevertheless necessary that it conforms to the characteristics indicated in the first chapter.

B. The Conditions for Icelandic Thermal Development

Apart from the numerous techniques which are necessary for the

development of Icelandic thermalism, two particular aspects must be considered.

1. Participation of the Medical Profession

The thermal cure is a medical action. It must, therefore, be prescribed and followed by doctors.

This presupposes that:

the Icelandic medical profession be informed as to the thermal problems (so as to be able to prescribe this therapy when needed for these patients),

doctors specialized in thermal medicine exist for the surveillance of the cure in the treatment establishments.

a) Informing the Medical Profession

It appears that at present the Icelandic medical profession knows little of the possibilities of thermal medicine. This therapeutic aspect does not appear to be taught in the Medical Faculty.

Before the thermal establishments are opened, therefore, this must be brought to the attention of the medical profession.

This should be carried out by the intermediary of the Icelandic Doctors Association whose head office is the following:

Laekhafelag Islands
Domus Medica
Eiriksgotu 3
Reykjavik

This association publishes a medical journal which is distributed to all of the doctors.

The education of the profession could cover three aspects:

conferences on thermal medicine which would be given, under the aegis of the Association by foreign doctors specialized in these problems;

medical articles on the uses and results of thermal medicine, written by specialist foreign doctors which could be published in the Association's journal. This, it would appear, accepts articles in the Icelandic and English languages. It would, however, be useful that these articles be translated into Icelandic, so as to ensure the largest possible readership;

the publishing of a booklet on thermal medicine which could be edited by the Ministry of Health and distributed by means of the Doctors' Association.

One would point out that there are a few doctors in Iceland who deal with physical medicine whom it would be necessary to contact, in order that they participate in the education of the medical profession.

b) Training of Specialist Doctors

The teaching of medicine is carried out at the University of Reykjavik; the training of specialist doctors is on the contrary most often undertaken abroad.

In order to train the doctors who will be in charge of the thermal establishments, these in the same way, should be sent abroad for training. This training could be ensured by a course of instruction lasting one year, partly in a university hospital, and partly in the thermal resorts corresponding to the future therapeutic uses of the Icelandic establishments.

2. The Practicality of a Cure for Foreign Patients Involving a Forfeiture Payment

The expenses inherent in a thermal cure for foreign patients could be included, to advantage, in an overall priced cure covering all of the diverse provisions:

medical expenses (treatment and medical surveillance),

lodging (full board),

possibly the return journey from certain major foreign towns to the Icelandic resort.

Only the cost of entertainment (for example, excursions) would have to be added to this overall price.

As things are at present, there is little chance that the expenses of a thermal cure in Iceland would be covered by the organizations such as the Social Security in France, which exist in various countries.

It is likely, therefore, that this international thermalism can only interest a select clientele and not a mass clientele. The use of an overall forfeiture price would without doubt increase the possible clientele, who would otherwise hesitate before the expenses, the importance of which they could not exactly calculate.