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HEALTH TOURISM: TOOL FOR DEVELOPMENT: THALASSOTHERAPY

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ABSTRACT

Tourism contributes to the development of the coastal zone in a significant way to the extent that it sometimes displaces older activities and becomes the major earner. However, not infrequently the unbridled development of this resource leads to environmental damage. The Black Sea Romanian sector has an opportunity to redress excesses from the past and yet to foster a sustainable development by updating its health tourism. This paper examines the role that thalassotherapy could play in such scenario based on a wide examination of developments throughout the European scene.

KEY WORDS: algae, muds, thalassotherapy, thermalism, acupuncture, economics

INTRODUCTION

Alternative, or parallel, medicine has been steadily gaining adepts and its merits have been discussed in conferences held at traditional colleges of medicine. Osteopathy, chiropractic, naturopathy, naprapathy, acupuncture, Chinese traditional medicine, thermalism, thalassotherapy, aromatherapy and others have entered the common vocabulary for some time, some celebrating their one hundredth

anniversary on the scene. The latter two make use of ocean algae in packs, powders and other forms. Of all these thalassotherapy and thermalism have been used for thousands of years and gained access to hospitals, private practitioners' offices, and the hallowed halls of some universities' faculties of medicine.

Thalassotherapeutics and thermalism got a boost in the nineteenth century when tourism lifted out of its infancy. The enthusiasm displayed by prestigious visitors to "health" centres - particularly of thermalism at the time - made it possible for "cure" stations to associate cultural, leisure, and even gambling activities with a treatment program. Napoleon III and his empress Eugénie contributed much, albeit mostly unintentionally, to the new fashion. A journey to a "cure" station took on a double aspect: a visit to a place to improve or restore one's health, the avowed aim of a trip, and of tourism and discovery, the hidden aim of the voyage, because a voyage it often was: roughly seven hours by railway from Paris to Plombières or to Deauville. Today it might be difficult to separate the "curist" from the "tourist". They are commonly both one and the same person.

Tourism has become a full fledged activity. Both the "treatment" and the desire to know a region and its cultural traits motivate the visitor. And for a modern person in search of his "better-being" simultaneously with his "well-being" marketing specialists play it from both sides: tourism uses thalasso/thermalism as a travel theme, while the cure-station uses tourism to diversify its offer. The aim is to "twin", to link, the medical quality of "cures" to the tourists' and curists' quality of life. An effort that has also to be directed towards children who may find relief, cure or improvement of ailments related to breathing, skin and developmental troubles, such as enuresis, growth and fracture healing. *Mens sana in corpore sano*: the body will heal the better if the mind is kept away from the problem: tourism may thus in some cases become a component of the curative process.

It has been often said, lately, that the tourist is increasingly in search of a "return to the sources"; that is not a legend, but fact, and water, pure clean water that is, is commonly equated with health and well-being. A concern that has not escaped the attention of the European Union's Commission (Anonymous, 1996; CHARLIER, 1999). Hence an increased interest in "water centres" whether Tatabanya, Baden-Baden, Mangalia or Varna. The blossoming of the "social tourism" as a consequence of paid leave, the explosion of mass tourism and a trend to spend holidays at considerable distance from one's home base are powerful factors in making "exotic" destinations popular and sites, such as the Black Sea, both easily conceivable in vacation planning, and also very accessible. In Brussels for instance separate offices offer exclusively "health and tourism" products: *Thalasso* for one, *Thermalisme* for another, are thriving on the fashionable Avenue Louise yet are patronized by a clientele from every social and income level.

THE CONCEPT OF HEALTH TOURISM

Efforts have been made for decades in Romania to develop tourism and sea-water therapeutics along the Black Sea coast. Other coastal countries in the area - Bulgaria, Russia, Ukraine - have not been lagging either. The success, in France for instance, of thalassotherapy centres has been heralded by economists, tourism officials and many health practitioners.

Thalassotherapy, and also thermalism, is thus certainly not new to Romania, nor to the world for that matter. What can be new is the updating of the facilities and the introduction of new technological advances. Health tourism is a powerful development tool and is undergoing an in-depth change. Where balneotherapy and exposure to coastal climate have been essentially a readaptive and convalescence treatment, a constantly growing segment of the clientele is made up of younger - and middle aged - people who seek an effective approach to reshaping, the *remise en forme*, encompassing not only physical reshaping but also a health restorative process. This involves demands on computers, equipment, personnel qualification, research, thus also retooling and refurbishing, and a fresh outlook on approach and problem-solving. There is also a need to establish scientifically the effects of thalassotherapy cures taken in Romania - as centres in other countries continuously endeavor to do - and to look at the potential of exporting the muds to other countries as do, e.g. the Italians (who provide muds to Bourbonne-les-Bains, France) and the Israelis (whose Dead Sea muds are used in Plombières-les-Bains, France).

COMPETITIVE, CONCURRENT OR CONCOMITANT ?

Thermalism, thalassotherapy, and lately aromatherapy, all claim scientifically proven curative effects. An abundant literature has been published recently, for instance in France, unfortunately often strongly publicity-geared (FRANÇOIS, 1999). Which does not mean that several treaties have not been written long before (JACOB, 1570; RUSSEL, 1720). BOULANGÉ, of the University of Nancy, and others, like COLLIN (1995, 1997) and CONSTANT *et al.* (1995), have made important contributions to the field (BOULANGÉ, 1995a,b, 1997a,b; BOULANGÉ *et al.*, 1989). Both thermalism and thalassotherapy use waters, muds and thermal gasses.

Of course, if one wishes to be "puristic", thalassotherapy is sole in using algae, sea water and only the aeration thereof. Techniques, however, appear to be quite similar in thermalism and thalassotherapy. They associated at the *Thermalies* of the 17th *Salon de la Santé* at Versailles in March 1999, a congress twinned with MEDEC *Salon de la Médecine*. As for aromatherapy it has not really wrought its place in the panoply of alternative medicines; it uses a variety of oils, extracted from plants; care with aromatherapy is not thus far eligible for benefits from the

social security system in France, though included in “putting back into shape” treatments in some centers, including well-known ones such as for instance Thonon-les-Bains. With the notorious exception of Belgium, thermal and thalassotherapy cures are reimbursable medical expenses in most countries of the European Union and in some others as well.

There are more than a hundred thermal cure centres in France alone, not counting those of overseas departments (La Réunion and Guadeloupe); thalassotherapy centres are at least a good fifty (Fig. 1-2). If France is, at least in numbers, the leader in Europe, Germany places a solid second (Fig.3). But there are as well centres in Denmark, The Netherlands, and Belgium (Fig.5). The latter and Luxembourg have famed thermal centres and it is Spa that gave its name to the cure centres. The practice of “taking the waters” is far less common in the United States where it rather faded away during the in-between World Wars period, although Saratoga Spa is still “on the map”.



Fig.1 - Thermal centres of the French Union of Thermal Stations

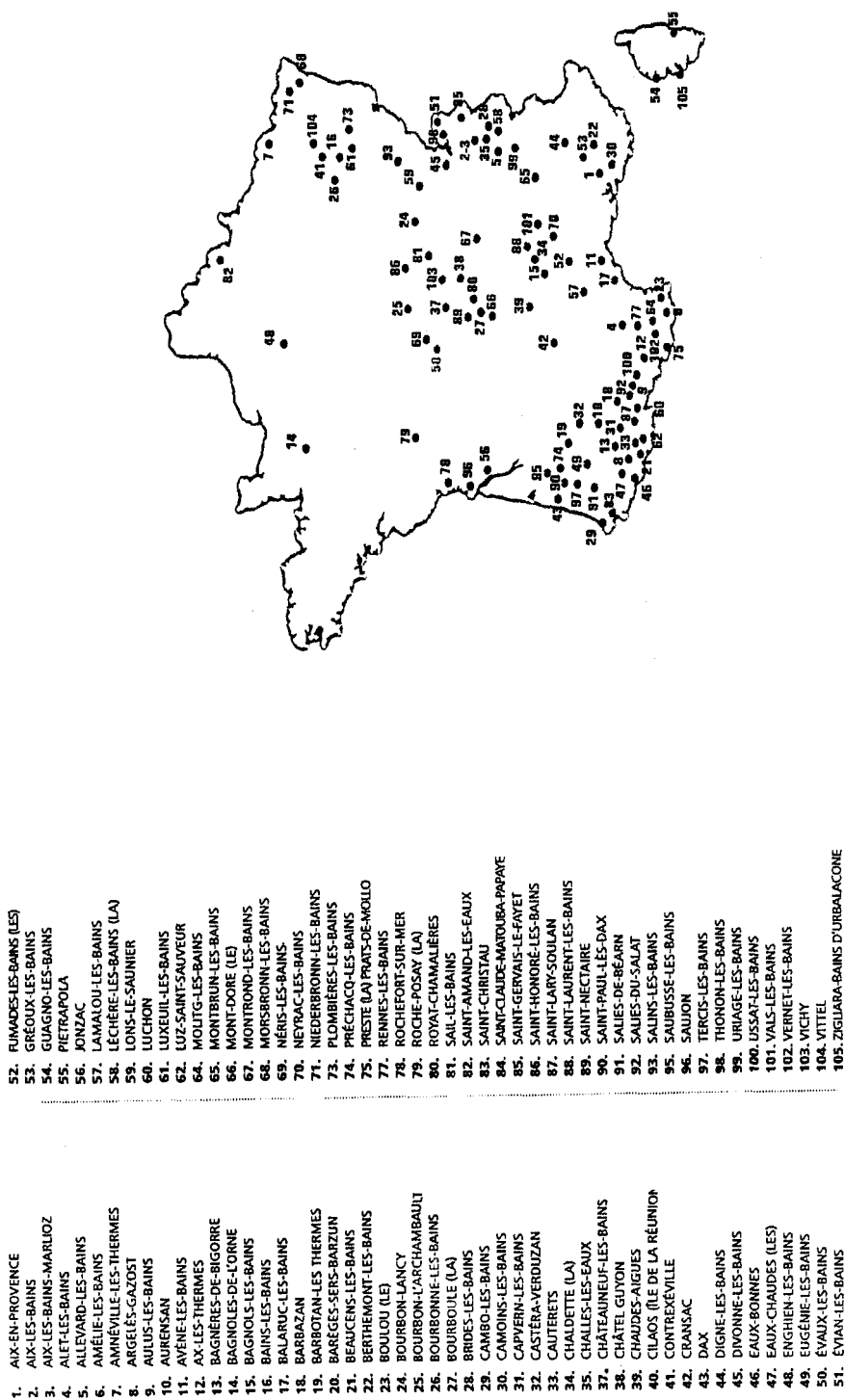


Fig.2 - Thermal centres in France, exclusive of Guadelupe and La Réunion

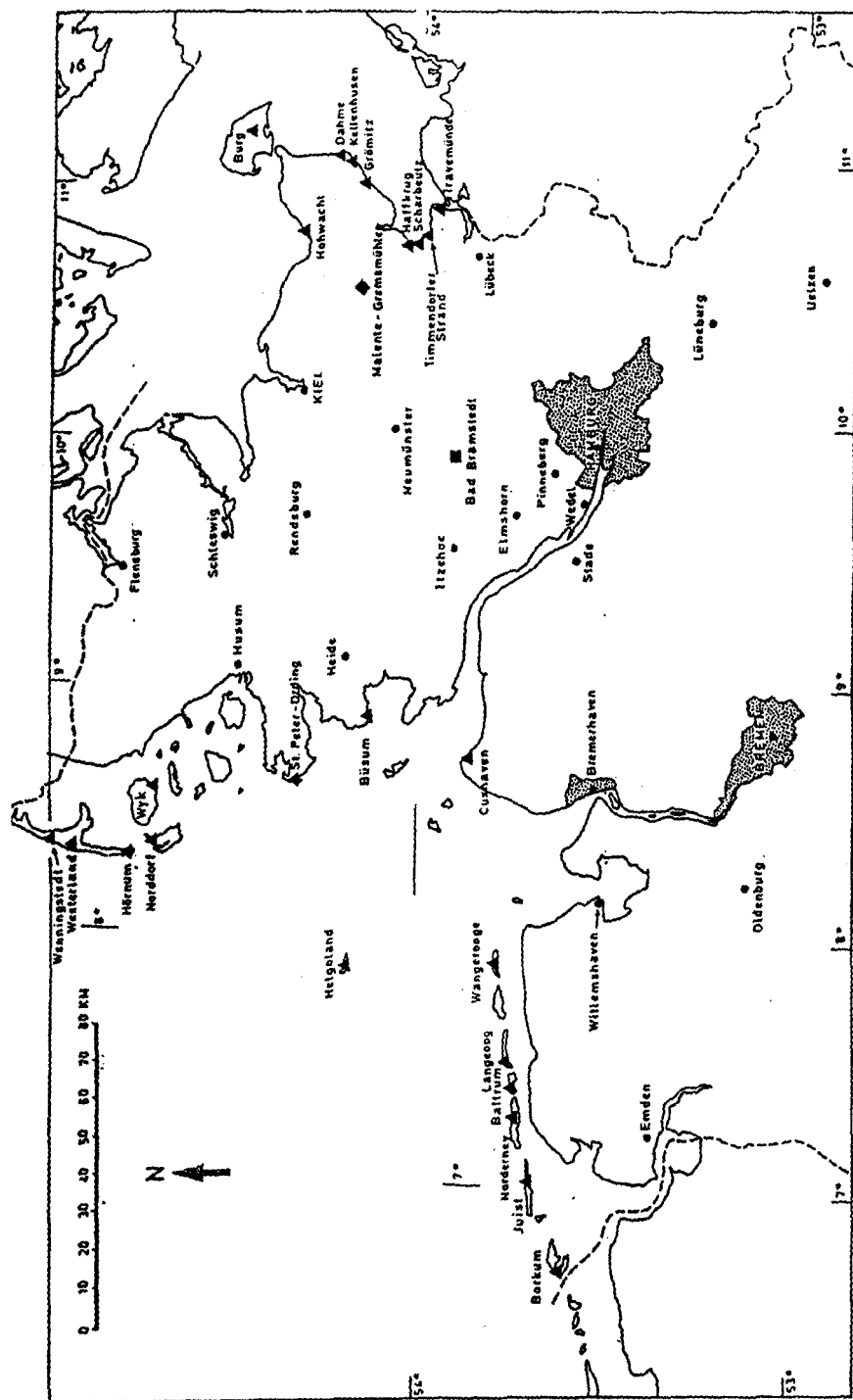


Fig.3 - Thalassotherapy centres in Germany

HISTORICAL PERSPECTIVE

The map of Europe is literally strewn with places where the Romans tapped thermal waters and built their famous *thermae* from the *Baths of Caracalla* to those of Trier (Trêves), Lindesina (today Bourbonne-les-Bains) or Plombières dating from before the year 100 (Fig. 1, 2, 3). Roman Emperor Augustus was there, and so were scores of other leading figures of history such as writers Diderot, Chateaubriand, and rulers or their relatives like Laetitia Bonaparte (Napoléon I's mother), Napoléon III, Louis XV of France, German Emperor Wilhelm II to name but a very few.

L. Buchet (1985), describing medicine and surgery in the first century in Gaul, focuses on the role of thermal waters, but use of seawater for therapeutic aims was known in what are contemporary Egypt, France, Italy and Greece as far back as 3000 BC. Nor was thalassotherapy a stranger in the medical arsenal of classical times. The knowledge and practice was spread by Celts, Gauls and especially Romans (GRENIER, 1960; KRETZSCHMER, 1966; RAMEAU, 1980; BUCHET, 1985; Anonymous, 1991; MALISSARD, 1994). Bath, in Britain (Aqua sulis in Roman times) got its name from the Romans' custom. Ancient Greeks placed considerable faith in the healing power of the sea. Greek poet Euripides (480-460 BC) wrote "The sea restores man's health", Greek philosopher Plato (428-437 BC) "The sea washes all man's ailments", and twenty centuries later historian Jules Michelet (1798-1874) opined "*La terre vous supplie de vivre; elle vous offre ce qu'elle a de meilleur; la mer, pour vous relever...*". But thalassotherapy faded away in the Western world imbued with Aristotelian logic, later nurtured by Gallileo (1568-1642) and Descartes (1596-1650), more recently by Pasteur (1822-1895) and physiologist Claude Bernard (1813-1878) (LARIVIÈRE, 1958).

C.I. Springer traces it back, in modern times, to the Margate Royal Sea-Bathing Hospital, and famed Blackpool, England, has its spot in sea-water therapy history (SPRINGER, 1935; CHARLIER, 1975). Russell of England, Barellai of Italy, Perochaud (and closer to us Rivière) of France, Benecke of Germany are credited as founders of the contemporary seawater therapy while M. Boulangé and his co-authors (1989) act as contemporary spokesmen for French thermal-therapy. Thalassotherapy is, however, no longer limited to utilization of the maritime climate, but involves administration of seawater orally and by injection, use of the spray of water, of the pounding effects of waves, of heated seawater baths, and such even newer approaches as combining electroacupuncture and sea-water therapy. The 1935 four hundred seashore sanatoria and preventoria have multiplied during the second half of this century.

Centres of marine cures are numerous in France, Germany, Belgium, Russia, Ukraine, Romania while no interest has been shown in the United States. In intense use before the twenties, seawater injections though credited with healing nervous and blood diseases in children, fell in disuse (JACOB, 1570; RUSSEL, 1720;

LARIVIÈRE, 1958; LANCE, 1988; BOULANGÉ *et al.*, 1989; HÉRISSON, 1989; VALNET, 1995; BOULANGÉ, 1995a,b; 1997a,b). In the late thirties near miraculous cures of nervitis, lumbagos, cellulitis and obesity focused anew attention on the healing effects of sea-air and sea-water (GRUBER, 1968). Today injections and oral administration of sea-water, even in minute quantities (in wise opposition with the RUSSEL prescriptions of large quantities !) can claim serious therapeutic effects.

REBIRTH

The resurgence of interest is coupled with new concepts. One hundred fifty years ago a report ventured that "therapeutics draw good results, every day, from the use of seawater and from salt springs; and although its use in baths and tubs is often not as advantageous as when taken in the surf, when the mechanical action of the fluid is added to its chemical action, one can still expect much of this [thalassic] therapeutic application".¹

In the twentieth century, under the influence of Freudian writings and the psychosomatic philosophical movement, medical thinking split into a traditional scientific approach and "anthropological medicine" which includes acupuncture and thalassotherapy.² The coincidence of timing between the renewed interest in marine cures and the growing disenchantment with current ways of life in an ever increasingly technological society may be underscored. The return to the sources desire is, of course, part of that trend.

Thalassotherapy is neither limited to nor solely based upon use of seawater: part of the treatment is the change of life style, the new surroundings, the freeing of the individual from modern life's stresses, embodying aerosol- and helio-therapy. The tiny salt particles contained in sea air (aerosols) work their way into the deepest parts of pulmonary alveoles and settle on their walls with a probably not negligible physiological effect (WOODCOCK & BLANCHARD, 1957). The high proportion of ultraviolet seaside sun rays influences favorably calcium metabolism. That natural oligo-element and others such as magnesium, manganese and cobalt, which buttress the organism's natural defenses, are also absorbed through warm sea-water baths. Its biochemical properties make it a successful side-effect free substitute for comfort medications.

Heated sea-water causes a dilatation of cutaneous vessels and under water jet streams has the same beneficial effects as the pounding of the waves against the body and its spraying by sea foam. The initial shock of cold water in swimming pools has been looked at as a potential negative factor, particularly for older persons. However most centres swimming pools are now adequately heated and wave machines provide the beneficial pounding.

¹ Translated from *Procès-Verbal de l'Académie Impériale Française de Médecine*, Séance du 5 février 1856

² RANGE, cited in LARIVIÈRE, 1958

Physiological effects of marine climates are reflected in a slowing down of the rates of breathing and heart beat. The amplitude of the respiratory movement and pulmonary ventilation are increased, and so are the hematies in the blood and hemoglobin ratio, while heart contraction is reinforced; the body is thus better prepared for the beneficial impact of sea-water baths due to an increase of cutaneous exchanges. Many physicians recognize such additional symptoms as neuro-endocrinic and growth stimulation, and an increase of diuresis and of basic metabolism.

Showers prior and after baths, overall or localized, exert a dual thermal and mechanical action on vessels and nerve endings; alternance of short cold and warm water sprays may well have the same tonifying effect as the Finnish sauna. Gynecological irrigations favor sea-water's hypertonic action upon mucous tissues and penetrative ability. Nasal irrigations, aerosols, gargles help with sinus problems, ear-, nose-, and throat ailments (AREHART, 1969).

The medical and pharmaceutical value of marine "products" has of course been proven. Didemnins-B, diazomide-A, dolastin-10 and discodermolide are all potential cancer fighting compounds derived from marine organisms dwellers of the coral reefs ecosystems. Marine organisms produce chemical compounds - and over 6000 unique compounds have been isolated with hundreds providing "drug leads" - with anti-viral, anti-bacterial and anti-fungal properties. The bryozoan *Bugula neritina* produces bryostatin-1, a potential anti-cancer agent, *Pseudopterogorgia elisabethae*, a soft bodied coral known popularly as the Caribbean sea whip, produces anti-inflammatory pseudopterosins.

French and German pharmaceutical firms market vials of seawater tapped at 50 km offshore depths of up to 20 meters. It is claimed that such waters when purified provide cures for gastric troubles. With a reduced salinity the water remains nevertheless rich in magnesium and other oligo-elements, and free of chlorides, closely resembles blood plasma. Bread, crackers and pasta made using sea-water are marketed in France, Germany and The Netherlands.

ALGAE

Algae have been alternatively, and concurrently, praised and damned along coasts (CHARLIER, 1990). Romania, and the Black Sea generally, are no exception to this situation (BOLOGA, 1985/1986; PETROVA-KARADJOVA, 1990; CHARLIER & LONHIENNE, 1996; BOLOGA *et al.*, 1999). The European Union under its COST-48 program has encouraged research into their use and their eradication (MORAND *et al.*, 1990; GUIRY & BLUNDEN, 1991; SCHRAMM & NIENHUIS, 1996). They have a role among others in food and feed, in cosmetology, methane- and fertilizer-production, and in therapy (PRICAJAN & OPRAN, 1970).

The passage of algae components such as iron and cobalt through the skin is

controversial for several physiologists. On the other hand biomedical applications of *Lyngbya majuscula* are recognized by oncologists; this reef dwelling blue-green alga produces curacin A which functions as an anti-proliferative that inhibits cell-division, the mechanism by which cancer grows and spreads. Algae powder has been added to seawater baths and algae creams are sold in pharmacies and cosmetology stores.

They are present in some marine muds, and in some treatment centres their proportion is increased. German physicians had already in 1929 collected muds in a remote corner of Wilhelmshafen harbour. Romania has advertised them widely. French "marine cures" use an alga jelly mixed with wet sand heated in a double boiler. The mixture applied to the body slowly releases its heat. The ionic displacement of marine electrolytes and algal constituents through the skin is however not universally agreed upon. Challenged fifteen years ago, the practice is continued both in centres and on shores. German centres provide pelotherapy using silt packs rich in vegetal and mineral substances, rather similar to the moor-silt.

A mineral spring discovered in the royal residence of Ostend (Belgium) launched a thermalism and thalassotherapy centre (1856) at one time catering to as many as 80,000 "curists". The vegetal marine mud, also in use here, is principally made up of compacted peat carried at strong high tides to the beach area. Dried, it is turned into a powder and mixed with a marine clay powder. For use in local applications the peloid is mixed with sea-water and heated in a double-boiler.

Some of the hypersaline lakes of the Romanian Black Sea coast, according to the season, have temperatures that may reach 27°C with an alkaline pH. The microfauna is abundant and at least thirty species of algae have been identified. The water level may fall to 14 cm of the adjoining Black Sea. The bottom muds, rich in amino-acids and carcyonoids, have a high rate of natural radioactivity. Some muds are sapropelic, with phyto-remains, particularly algae which putrefied in an anaerobic environment (PRICAJAN & OPRAN, 1970).

Black Sea centres ring its shores; originally catering especially to their own nationals, they have increasingly drawn foreign visitors. Mangalia, southernmost resort, has attracted seamen since classical times; it forms with Eforie and Neptun, artificial creations, the Romanian cure complex. Blessed with a balmy climate, the centre offers a therapy based on seawater and sapropelic mud use, sulphurous mesothermal springs, mud baths and application of mud poultices and acquired some international reputation. The black, pasty sapropelic mud comes from Lake Techirghiol, with a mineralization of 80 g/l. Concentrated mud extracts have been shipped to distant locations. At 150 m from the sea, the beach facilities follow the Egyptian method of open-air treatment. An air rich in iodine, magnesium, bromine and sodium chloride creates an ambiance particularly favorable for aero-ionization and insolation.

As in Germany, pelotherapy is also practiced with peat mud found in Lake Mangalia. Bicarbonated, hypotonic, mesothermal (26°C), radioactive, sulphurous

water sprouts from springs on and near the Mangalia and Neptun beaches. The sapropelic mud rich in carbonaceous or bituminous matter has a plasticity value of 250 g, a thermal metric capacity index of 20.99. It is enhanced by bacteriostatic, bactericidal and anti-allergic qualities due to its high vitamin (C, E, B₂ and B₁₂), nicotinic acid, hormones and organic content.

SOME ECONOMICS

Setting aside the savings aspects in hospital days and pharmaceutical consumption which benefit State and private insurance systems, and the individual, and considering the tourism aspects, it appears that thalassotherapy and thermalism are large earners and big employers. Taking for example the sole thermalism in France, in 1998 centres hosted 548,003 curists representing 9,864,054 "visitors" days for insured parties and 527,629 days for other curists, for a year's total of 10,391,683. Many did not come by themselves but were accompanied by non-curists, representing an additional 300,000 persons.

A low priced cure costs an average FRF 1000 for a 6-day stay, with a per person FRF 2200 tab for food and accomodations (thus exclusive of such additional expenses as beverages, entertainment, sundry purchases). The income for the French centres, besides payment for medical services, exceeds thus by far 13,400,000 "days" x FRF 2200 = FRF 29,480,000,000 or approximately US\$ 4,674,000,000, about EUROS 4,494,000,000. It is furthermore estimated that the 100-plus thermal centres provide employment to at least 100,000 people.

One one hundredth of this is 1,000 jobs and an income of US\$ 46,740,000 or, LEI 747,840,000,000 for a single low priced centre. *Thermae* income amounts to, using the same formula, FRF 104,000,000 or about US\$ 16,508,000 or EUROS 15,857,000 or LEI 264,128,000,000.³ An adjustment factor is naturally needed as wages and prices are clearly higher in France than in Romania. Nevertheless thalassotherapy (and of course thermalism) are not to be looked at as an insignificant economic player.

Revenues may also be generated by pharmaceutical and cosmetics: the University of California has received in royalties for patented pseudopterosins over US\$ 1,200,000, and the cosmetics firms have collected several millions more. Algae and muds can thus be "earners".

TREATMENT CENTRES

Thalassotherapy stations have a long history with the largest number of stations in Germany and France (Fig. 1,2,3,5). Black Sea facilities acquired a solid reputation over the last decades (Fig.4). Most of the 22 German stations (Fig. 3)grew in

³ Approximate exchange rates used in the 1999 calculations are FRF 6.3 = US\$ 1 = LEI 16,000; EURO 1 = FRF 6.56.

importance during the last half century. They have attracted a large clientele and contributed substantially to the growth and expansion of touristic sites.

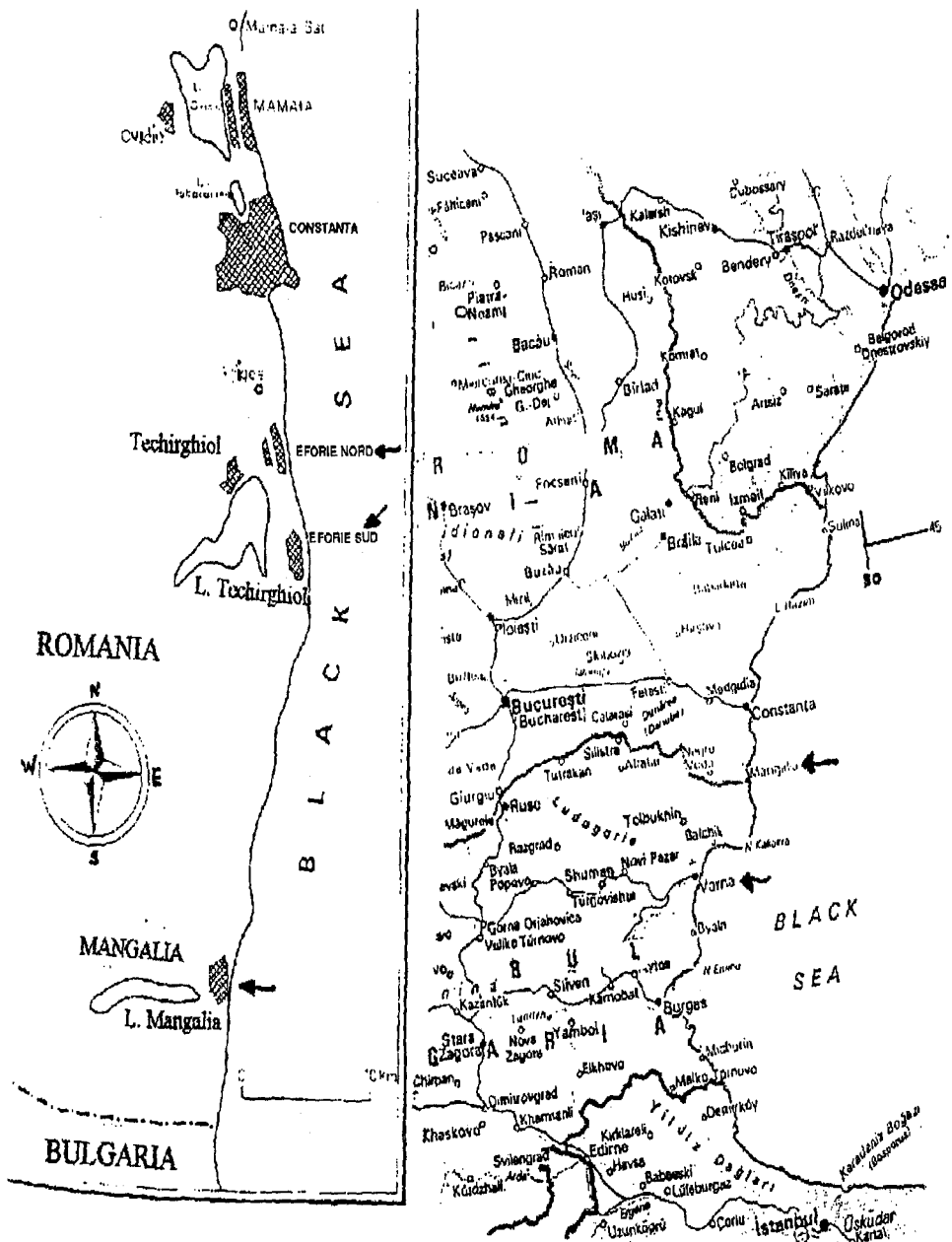


Fig.4 - Thalassotherapy centres (←) on western coast of the Black Sea
The introduction of new technologies such as the combination of electro-

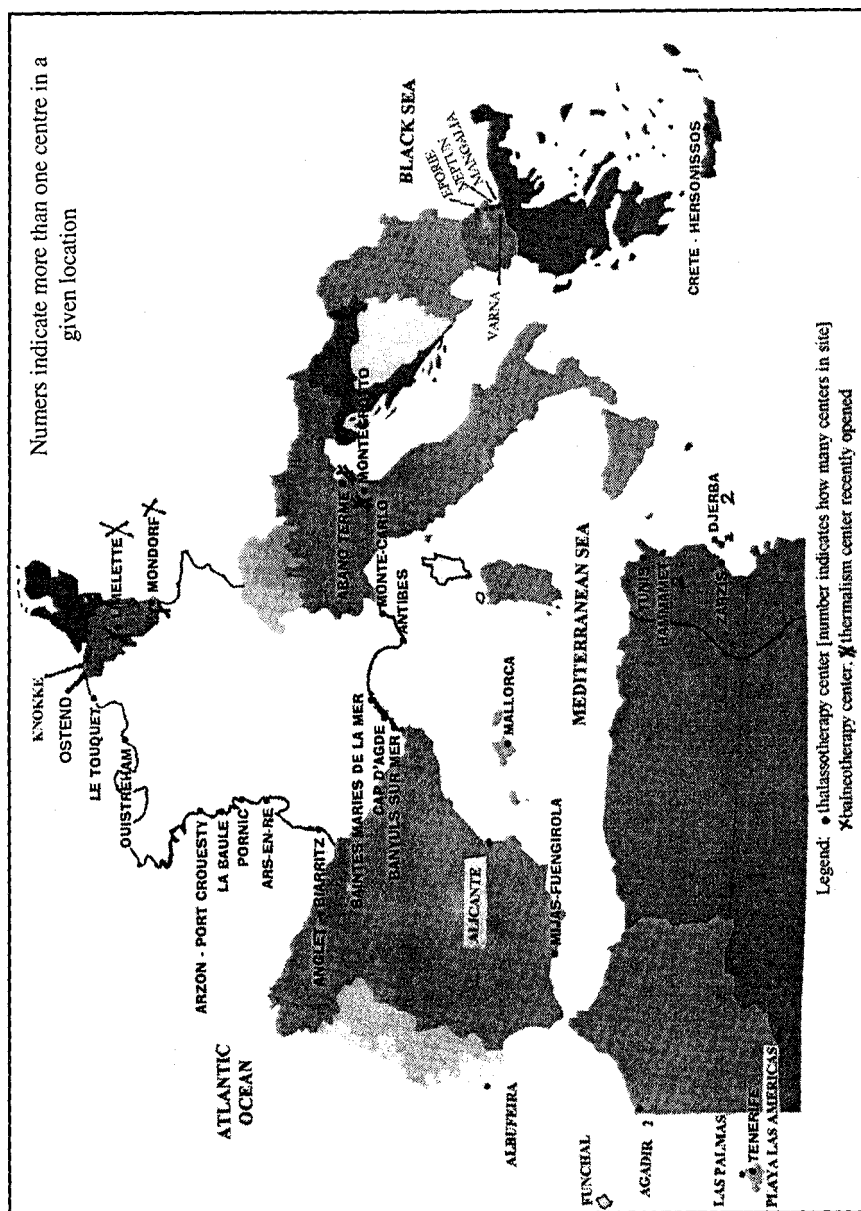


Fig.5 - Centres of thalassotherapy in Europe south of the Belgian-French border. For France only a few recently opened or refurbished centres are shown. For complete listing see LANCE, 1988

acupuncture with thalassotherapy is due to win over a new clientele. Thalasso-electro-acupuncture brought back from China relatively recently, has rapidly gained *droit de cité* and garnered enthusiasts in French centres. The development of a therapy *de pointe*, free from extravagant claims (Fig.6), in up-to-date facilities can nurture a sustainable and rational growth of Romanian Black Sea resorts.



Fig.6 - Example of exaggerated publicity geared claims occasionally made by cure centres

One may recall the medications developed some decades ago by Romanian Dr Aslan (Gerovital, Aslavital) against ageing. Her work remained highly controversial to the point that some considered her therapy charlatanism. Is a similar risk conceivable with thalassotherapy and its sister cure thermalism ? Indeed development must be considered on a long range scale.

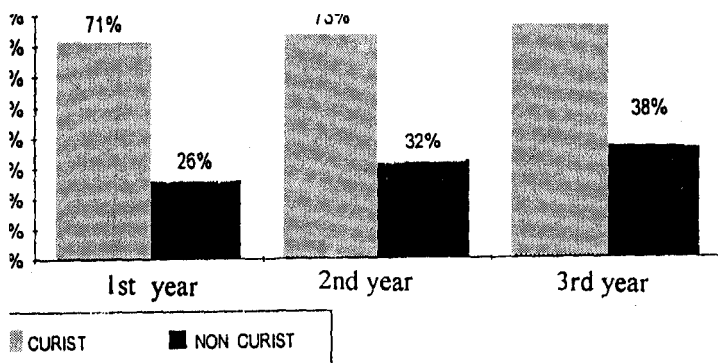


Fig.7 - Comparison between patients' health condition (respiratory ailments)

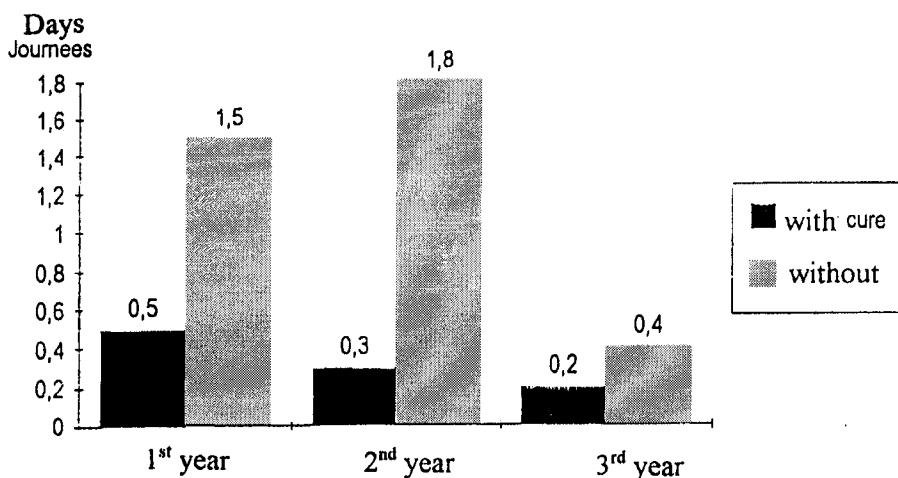


Fig.8 - Decrease in the number of hospitalization days (annual mean)
(Source: Study made by the French National Agency for Illness Insurance
covering 3000 patients over a period of 3 years)

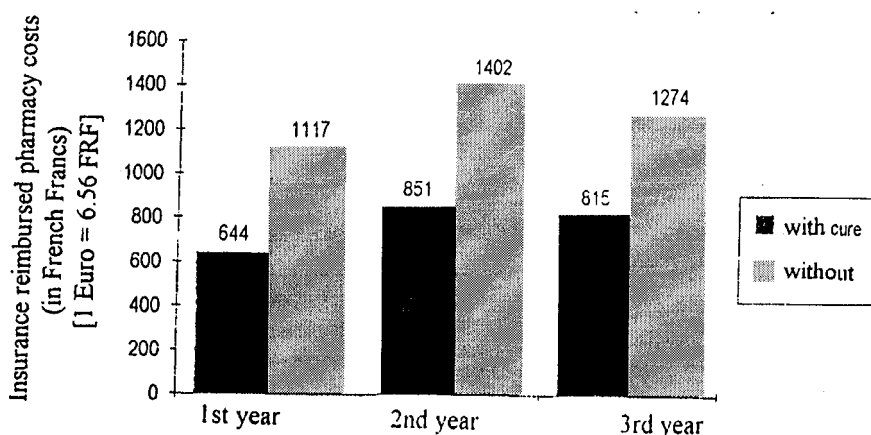


Fig.9 - Decrease in prescribed drug consumption (France)

Comparisons have been made among European centres and a critical analysis of the recent relevant bibliography published (COLLIN, 1995; CONSTANT *et al.*, 1995; GRABER-DUVERNAY, 1999). A study conducted by the French National Health Insurance System (*Caisse Nationale d'Assurance Maladie*) observed 3000 persons who took a thermal cure during a span of three years and found a health improvement dealing with various ailments, e.g. rheumatism, back pain, arterial problems (GUILLEMIN *et al.*, 1994; BOULANGÉ, 1995;

Anonymous, 1997; COLLIN, 1997), in two-thirds of the group (Fig.7), and a concomitant decrease in the length and frequency of hospital stays (Fig.8). Furthermore the use of medicines dropped or was cut for 72.4% of the patients (Fig.9) while the disbursements of the Health System for thermal care represent barely 0.22% to 0.43% and “cures”, stays at thermal centres, represent 0.89% to 1% of the total medical “consumption” (Fig.10). It is not preposterous to extrapolate these observations to the domain of thalassotherapy.

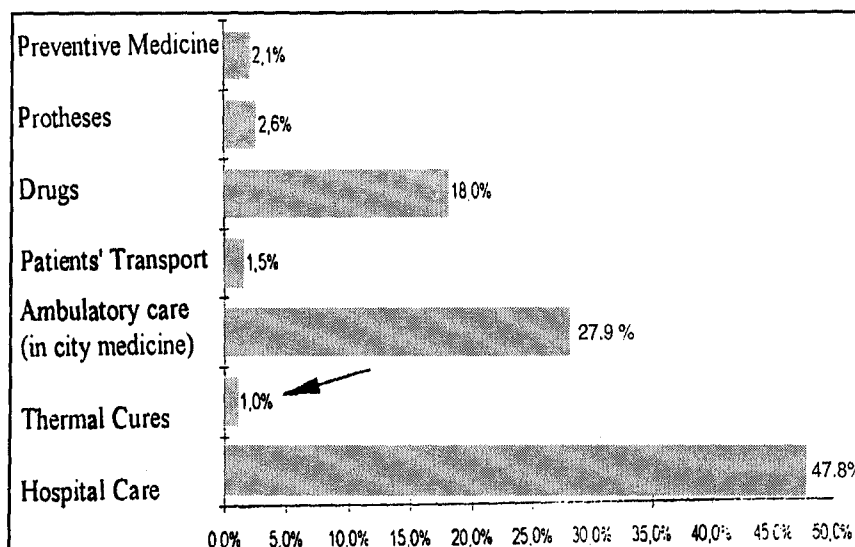


Fig.10 - Medical consumption in France in 1993

In fact a thorough scientific project has been conducted by the department of hydrological and climatological medicine of the University of Nancy medical faculty and results made public in July 1999. The conclusions are positive and doubts as to the value of thermal cures seriously challenged. The congress (*assises*) of thermalism held in Toulouse, France in May 1999 (*Proceedings* were published in June 1999) confirms the medical dimension of thermalism. Positions held since 1996 seem thus appropriate. Furthermore statistics show a substantial sustained drop in the frequency of hospital stays and the consumption of medicines (Fig. 8-9).

The venture is foreseeably valid and sustainable. BOULANGÉ in his 1989 and 1995 papers examining the scenario, both in the framework of the European unification and of the next century, for French thermalism - and there is no reason for not extrapolating these views to thalassotherapy - sees a bright future. Why should it not, given budgetary and technological possibilities, be so for Romania?

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