

ΓΕΩΓΡΑΦΙΚΑ ΧΡΟΝΙΚΑ



GEOGRAPHICAL
CHRONICLES

ΔΕΛΤΙΟΝ
ΓΕΩΓΡΑΦΙΚΟΥ ΟΜΙΛΟΥ ΚΥΠΡΟΥ

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ΓΕΩΓΡΑΦΙΚΑ ΧΡΟΝΙΚΑ

By OTHON YIANGOUILLIS, B.A., M.A., M.Sc.
President, Cyprus Geographical Association



GEOGRAPHICAL CHRONICLES

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THE PEOPLE OF THE NICOSIA RURAL - URBAN FRINGE: A CASE STUDY

By OTHON YIANGOULLIS, B.A., M.A., M.SC.
President, Cyprus Geographical Association

INTRODUCTION

Much was written during the inter-war and post-war years (1940—1960) on the land use structure, social composition and function of rural-urban fringe areas. However, most of the studies on the social aspects of rural-urban fringe areas have been confined in the U.S.A. (Firey, 1946, Beegle, 1947, Kimball, 1949, Gist, 1952, Martin, 1953, Jaco and Belknap, 1953, Blizzard, 1954, Beegle and Schroeder, 1955, Kurtz and Smith, 1956, etc.), and there has been a general absence of explicit references on the subject outside North America. Scattered contributions, made mainly in the post-1960 period, form minor exceptions (Colledge, 1960, Pahl, 1965, and Pryor, 1969).

This paper is an attempt to fill some of the vacuum and its purpose is to examine the characteristics of the people living in the rural-urban fringe of a medium-sized town of a developing country.

The research area chosen was the rural-urban fringe of Nicosia (pop. 110,000), the capital city of Cyprus (Fig. 1). The area has been defined and delineated by the same author in 1974 and is economically dependent upon the central city (Nicosia).

The data concerning the socioeconomic attributes of the people living in the Nicosia fringe is based on an 18.8 per cent random home survey sample, using interview questionnaires, conducted in the summer of 1973.

The sample was drawn from the ten Greek villages within the fringe area and the Shtyos - Nea Lapithos fragmented settlement. In the area surveyed there were 3,671 households¹ and 690 of them were included in the sample. The sample size varied from village to village the principle being that the smaller the settlement the larger the sample should be in order to include sufficient numbers of persons with special attributes to make satisfactory analysis worthwhile and meaningful (Moser and Kalton, 1972). Thus in the case of Shtyos a 100 per cent sample was used because of the small number of households (21). In Kythrea, a community with 637 households, a 15.5 per cent sample size was used.

ORIGIN OF PEOPLE

For the identification of the origin of the people living in the fringe the household heads were divided on the basis of origin in the following categories: **local urban-origin** were those whose previous residence was located in Nicosia or the Nicosia suburbs (Greater Nicosia); **local rural-origin** heads were those who originated in the fringe, and **nonlocal-origin** heads were those whose previous place of residence was

1. Census of Greek Population, Department of Statistics, Ministry of Finance, April 1973.

THE RURAL-URBAN FRINGE
NICOSIA-CYPRUS

- Inner Boundary
- Outer Boundary

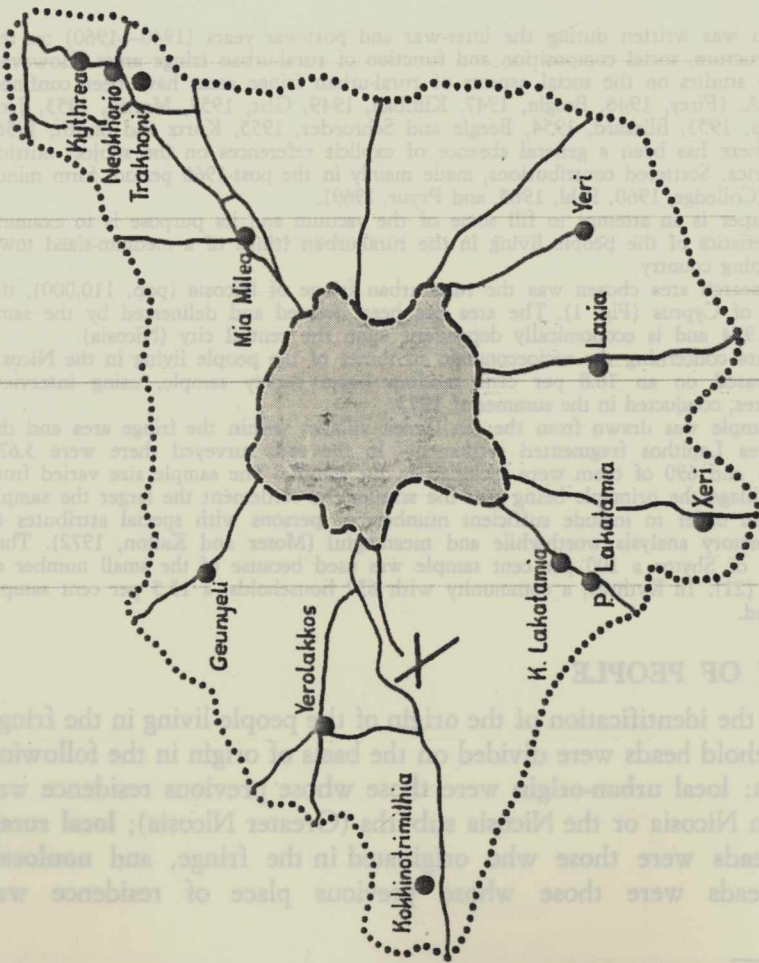


Figure 1

outside the fringe area or the local urban area. Figure 2 shows that nearly half (45.5%) of the household heads in the study

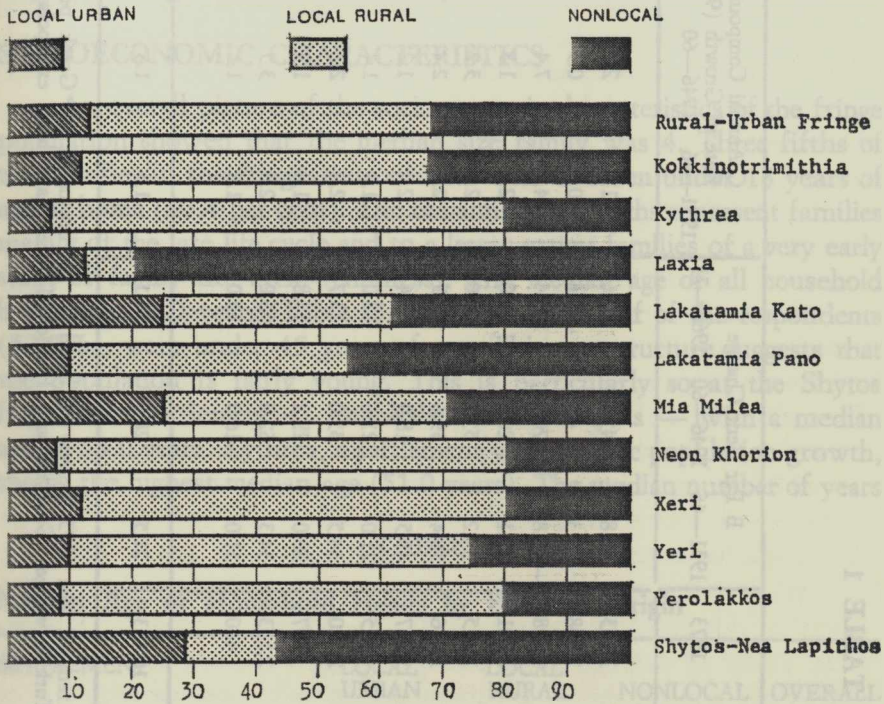


Figure 2

Percentage of household heads in the rural-urban fringe and in each Greek fringe settlement by place of origin.

area are in-migrants. About 85 per cent of them moved in the area during the post-World War II period. By place of origin 13 per cent of the heads or about one out of eight household heads were local urban; the survey showed that about 2/5 of these local urban-origin household heads moved from "rural push areas" to Nicosia and from there to the fringe, mainly after marriage. Those with local rural-origin accounted for 54.5 per cent or approximately one out of every two heads whereas the nonlocal-origin heads accounted for about 32 per cent or about one out of every three heads. The settlements with the lowest local rural-origin heads (less than 50%) are Laxia, the fragmented settlement of Shytos - Nea Lapithos and Lakatamia Pano and Kato. These are the settlements with the highest population growth (Table 1). Kythrea and Neon Khorion exhibit the highest percentage of heads with a local rural-

TABLE 1

Intra-Fringe Population Changes

A	Population*		1973	B Per Cent Change		C Annual Compound Rate of Growth (%)		
	1931	1946		1946-60	1960-73	1931-46	1946-60	1960-73
Kokkinotrimithia	539	716	1,353	32.8	45.8	1.9	2.7	2.0
Kythrea	2,577	2,818	2,908	9.3	4.9	0.6	0.3	-0.4
Laxia	330	485	1,098	-45.8	170.9	-4.0	7.4	6.5
Lakatamia K.	685	1,133	1,801	38.1	20.5	2.2	1.3	3.5
Lakatamia P.	445	929	1,115	34.2	55.6	2.0	3.2	1.4
Mia Milca	557	771	1,426	38.4	39.6	2.2	2.4	2.2
Neon Khorion	821	1,178	1,517	43.5	18.0	2.4	1.2	0.7
Xeri	561	679	925	21.0	21.6	1.3	1.4	0.9
Yerolakkos	1,231	1,384	2,310	34.5	35.0	2.0	2.2	1.6
Yeri	504	655	997	30.0	29.2	1.8	1.9	1.3
Guenyeli	632	849	2,153	34.3	62.0	2.0	3.5	3.5
Hamid Mandres	276	361	480	31.0	16.0	1.8	1.1	1.1
Total	9,158	11,127	18,083	21.5	28.9	1.3	1.8	1.8

* The figures for 1931, 1946 and 1960 represent official census returns. The 1973 figures are based on the census of the Greek population, April, 1973, Department of Statistics. The figures for the Turkish villages Guenyeli and Hamid Mandres have been extrapolated from the 1946-60 rates of growth.

origin; these are among the villages with the lowest population growth (Table 1). It seems, therefore, that in-migration is a significant factor in population growth in some of the peri-urban settlements.

SOCIOECONOMIC CHARACTERISTICS

An overall picture of the socioeconomic characteristics of the fringe population showed that the median size family was 4. Three fifths of the families in the fringe were couples with children under 18 years of age at home (60.4 per cent). The remaining two fifths represent families mainly of the late life cycle and to a lesser extent families of a very early stage of family life cycle (childless). The median age of all household heads was 43.0 years (Table 2), and more than half of the respondents (52.0%), were under 45 years of age. This age structure suggests that the population is fairly young. This is particularly so at the Shytos fragmented settlement — established in the 1950's — with a median age of 33.0 years. Kythrea, a settlement with a static population growth, shows the highest median age (51.0 years). The median number of years

TABLE 2

Median Age of Household Heads by Place of Origin

SETTLEMENT	LOCAL URBAN	LOCAL RURAL	NONLOCAL	OVERALL
Kokkinotrimithia	33.0	43.0	40.5	42.0
Kythrea	36.0	54.5	44.0	51.0
Laxia	30.0	50.0	30.5	32.0
Lakatamia K.	40.0	46.0	48.0	45.0
Lakatamia P.	50.0	47.5	40.0	45.0
Mia Milea	41.0	52.0	40.0	46.0
Neon Khorion	33.0	47.0	35.0	46.0
Xeri	38.5	58.5	40.5	44.0
Yeri	33.0	49.5	34.0	43.0
Yerolakkos	36.0	43.0	43.0	43.0
Shytos—Nea Lapithos	29.0	31.0	36.0	33.0
All Settlements	35.0	50.0	40.0	43.0

at school attended by household heads was six, the time required for completion of elementary education. The overwhelming majority of the fringe area residents (95.9% of the sample), were owners of their

house. This is attributed mainly to the dowry system. When the families were compared for socioeconomic characteristics by place of origin no difference was observed in the family size, the median being in all cases 4. Differences existed, however, in the median age of the household heads (Table 2). Local-urban household heads were the youngest (35 years median age), and this tendency was nearly persistent in every individual settlement; Pano Lakatamia was the only major exception. The low age of the local-urban household heads is probably due to the fact that decentralization of population from Greater Nicosia is a recent phenomenon, the catalytic force being soaring land values and high rents.

Next in the rank were the nonlocal origin household heads with a median age of 40 years. Local rural-origin household heads had the highest median age (50). The general conclusion drawn from this structure is that the migrant population is younger than the local, a point that substantiates an earlier argument that most of the newcomers moved to the area in the post-1945 period; since mobility is high among young people, one would expect this age differential between the local-rural origin heads and the other two groups.

When education of household heads was compared by place of origin no difference was observed. If education is used as an index of social status or prestige these statistical results indicate that the fringe area is not undergoing social differentiation as a result of in-migration. When, however, the median education of those moving out of the fringe area is examined the picture presented is slightly different. Questions included in the questionnaire asked the respondents to state whether they had any children who moved out of the area and the purpose of such out-migration. From the analysis of the results it turned out that about 248 children above secondary school age moved out, excluding university students. The median number of years of school attended by these out-migrants was 7.0. Analytically the results have as follows:

1. 95 moved to the local urban area; median education 12 years.
2. 75 moved to nonlocal areas; median education 6 years.
3. 78 emigrated; median education 6 years.

These results indicate that the local urban centre is gaining the best stock. Looking the fringe area from this angle one could argue that it undergoes a slight social differentiation. The best and most frequent method, however, used by social research workers in rating people into various classes is by the use of a socioeconomic index for occupation. Under this method the occupations are grouped into various headings

and the class figure of each group indicates respective prestige ratings. There are many such schemes using different classes and subdivisions and finding favour among some research workers than others. The one adopted in this study, slightly modified to suit the Cyprus situation, is the Hall-Jones Scale of Occupational Prestige for Males (1950). It has the unusual merit that it is partly based on the prestige ratings given by a representative British sample and filled out by the judgements of expert sociologists. In the body of the scale itself there are also occupations that occur in several classes, depending on the respondents level in, for example, the civil service or the police (see Appendix A).

In this study, for practical purposes, the seven socioeconomic classes have been condensed into five and minor adaptations have been made to suit the Cyprus situation (Appendix A).

Pensioners and unemployed were excluded from the original sample of 690 household heads because their social status could not be assessed by using the Hall-Jones scale. As a consequence of this adjustment the effective sample size was reduced to 618, composed of 88 household heads with local urban-origin, 318 with local rural-origin and 212 with nonlocal origin. The top left diagram of Figure 3 shows that about 40 per cent of the household heads in the fringe area were blue collar workers of the skilled and semiskilled type. Next in the rank were the routine nonmanual workers (Class 3), with a share of 27.5 per cent. The unskilled blue collar workers (Class 5), represented about 19 per cent of the sample. Obviously, their proportion would be higher if female workers were included because they provide a big share in unskilled manual factory work. Class 1 and 2 had the lowest share but unfortunately no data exist to compare the proportion of this group with the national percentage. In general it can be claimed that the overall occupational structure of the fringe area, as presented in Figure 3, is a rather balanced one.

There is a number of important features to be noted about the five socioeconomic groups that have been distinguished above. First it is possible to make a distinction between those groups which are growing and those which are stationary or declining. This can be achieved by comparing the composition of the local rural-origin household heads with that of other origins and the fringe area overall composition (Figure 3). The only expanding category is Class 4, composed of skilled and semi-skilled manual workers. The growth of this group has been produced by household heads moving out from Greater Nicosia (Local Urban) to live in the fringe villages. The static group consists of professional, managerial, executive and supervisory type of household heads (Class 1 and 2), whereas the routine grades of nonmanual work (Class 3), are

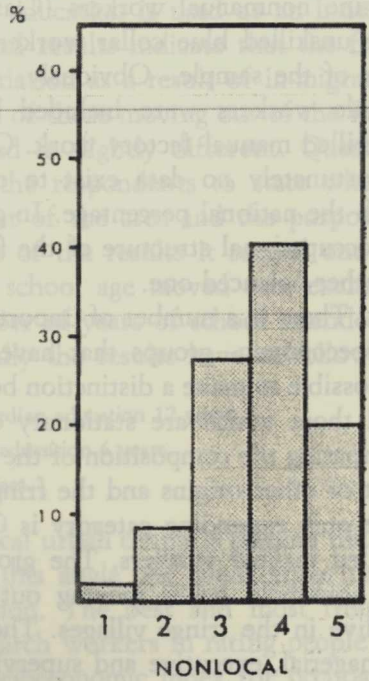
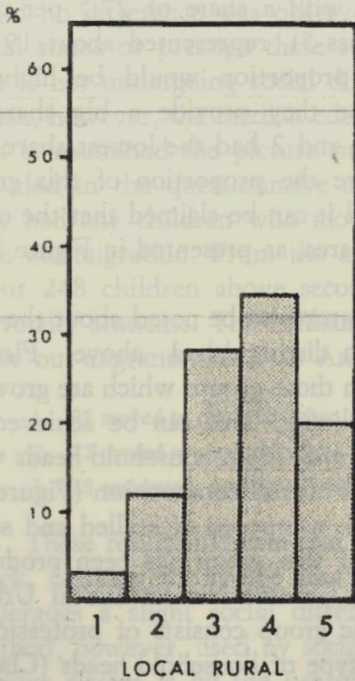
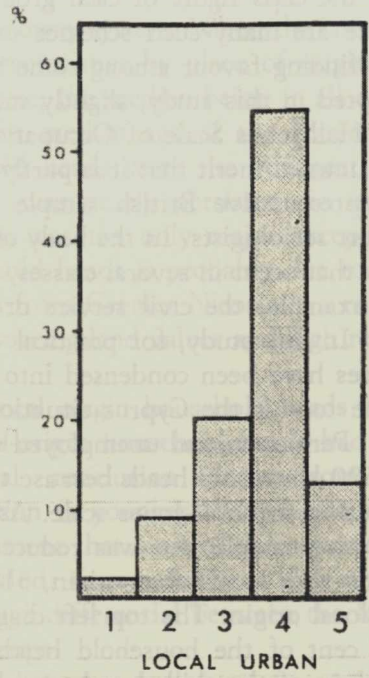
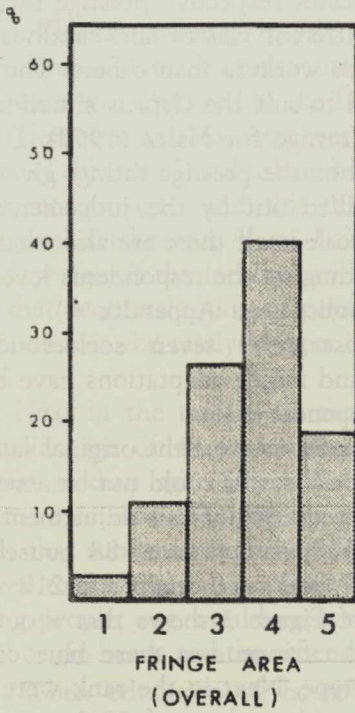


Figure 3
 Social composition of fringe household heads by place of origin in 1973. Percentages by Socioeconomic group. Definition of Groups is indicated in Appendix A.

declining because of a low contribution by local urban-origin household heads. Again, the local urban centre, by bringing few unskilled manual workers in the fringe area has contracted slightly the proportion of this class in the overall occupational pattern of the fringe area and reinforced the group of craftsmen.

LAND OWNERSHIP

A striking feature in the fringe area, which is common in other rural areas as well, is the high percentage of agricultural land holders, most of whom own small holdings. This type of land tenure is an "inherited" one.² Analysis of the survey questionnaires indicated that members of 50 per cent of the households own some agricultural land. The proportion of full-time farmers, including shepherds, is low, amounting to only 12.3 per cent (Figure 4). The remaining land proprietors may be classified into "contractor worker-peasants",³ lessors, and land owners who leave their holdings to fall into "social fallow". The "contractor worker-peasants" comprise the largest group, representing 28.8 per cent of all agricultural land owners (Figure 4). About one third of the "contractor peasant-workers" commute for work to the local urban centre. The remainder are employed mainly within the fringe area. Franklin (1969), maintains that off-farm employment has more effect upon the social than the economic character of both the community and the family. It is an influential factor in the social stratification of the village community and a basis for the aggrandizement of certain families and the relative decline of others. The appearance of employment opportunities in the local urban centre introduces the mores and technology of industrial society, enlarges the occupational opportunities and promotes the "mental urbanisation" on the residents of the urban-rural fringe.

2. The Wills and Succession Law (25 of 1945), stresses the concept of "justice in inheritance". Accordingly, upon the death of a property owner, the property is divided in specified shares amongst the heirs of the deceased.

3. The European "worker-peasant" phenomenon — a term equivalent to the French "ouvrier-paysan" or the German "arbeiter-bauer" — involves a mental urbanisation of members of the agricultural population who commute to urban jobs each day and yet continue to work their farms in the evenings, over weekends and during annual holidays from the factory. Thus, full-time factory work is combined with farming. The essential difference between the European "worker-peasant" phenomenon and the Cyprus situation is that in the latter case usually the land proprietors supply management but not labour to agriculture. They hire a full-time farmer to cultivate and sow the fields and a combine-owner for the reaping; in other words, instead of providing labour to agriculture they employ "contractors" to do the work for them. For this reason the term "contractor worker-peasant" has been preferred over the European term and in this study the few real "worker-peasants" (4.3 per cent of the sample) have been combined with the "contractor worker-peasants".

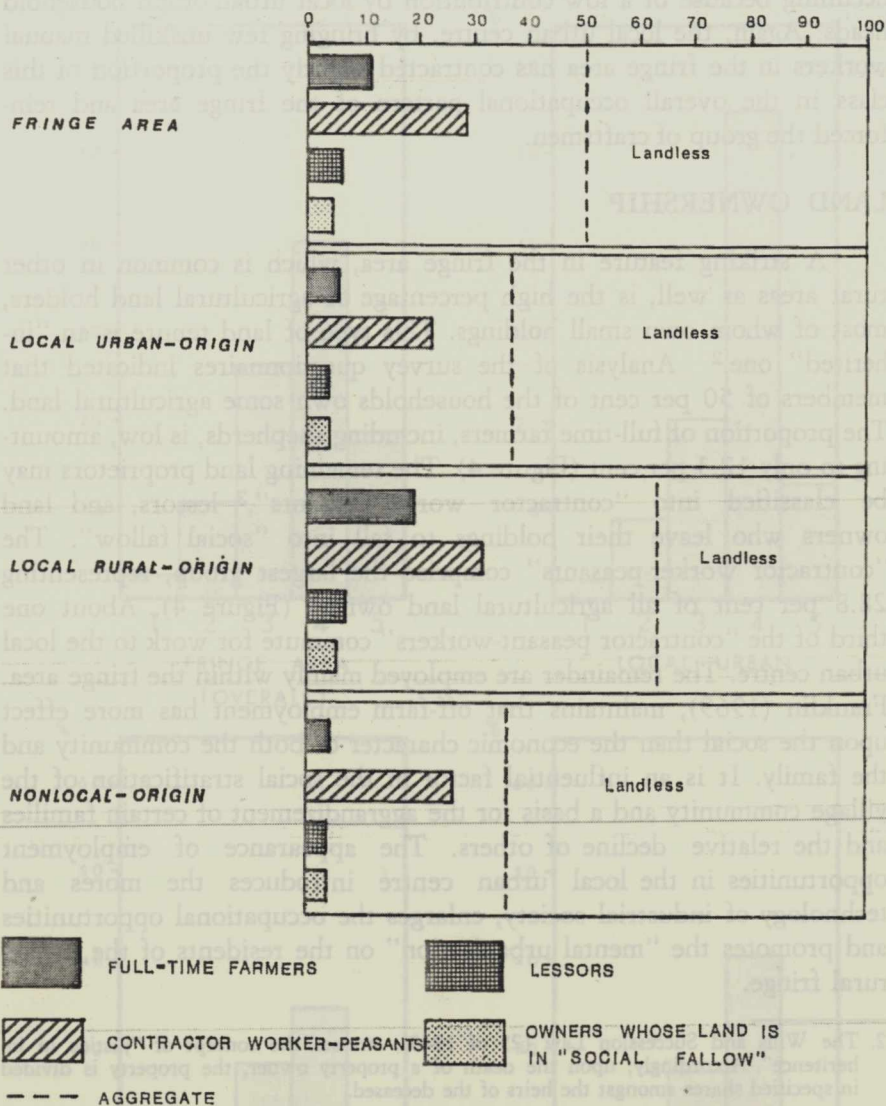


Figure 4
Proportion of agricultural land proprietors according to farming methods.

When land proprietor household heads are compared by place of origin (Figure 4), it can be observed that in all cases the "contractor peasant-workers" predominate although the local rural-origin heads have the highest share (32%) as compared to local urban-origin heads (22.7%) and nonlocal-origin heads (26.4%). Again, the local rural-origin heads have the highest share in full-time farming (19.5%) whereas the share of the other two groups is unimportant (Figure 4).

The third type of agricultural land-owners, the "lessors" (4.8% of the total sample), are those who rent their holdings to full-time farmers. They differ from the "contractor worker-peasants", in that they supply neither management or labour to their holdings. The final class of owners are those who do not exploit their holdings at all, due to socioeconomic rather than agronomic reasons. The Germans call this phenomenon "sozialebrache" and the English "social fallow". About 4.2 per cent of the total sample belong to this category. When the 309 agricultural landowners of the sample were broken down into their four constituent categories it was found that the "contractor peasant-workers" comprise the 57.6 per cent of the total, followed by full-time farmers with 24.5 per cent of the whole. Lessors were representing the 9.5 per cent of the agricultural land proprietors and land proprietors of the "social fallow" category 8.4 per cent.

COMMUTING

Another aspect associated with the fringe is the high rate of "commuting" for work outside the fringe area. About 60 per cent of the sample's active household heads (618), were employed in Greater Nicosia (commuting), and 4 per cent in nonlocal areas. One half of the commuters to Nicosia may be classified as "general commuters" (landless workers belonging to all five socioeconomic groups), and one ninth of them as "contractor worker-peasants". In 1969 the commuting rate for the whole active population of the same area was 56 per cent (Yiangoullis, 1972). The latter study, however, was based on estimates provided by the village headmen and it is quite probable that the 8 per cent differential was due to error in these estimates. In any case the difference between the two studies is not significant.

Although most of the fringe residents find their main economic support in Greater Nicosia the fringe area does contain sources of employment. If the 12% figure of full-time farmers is added to the 64 per cent commuting figure what is left is a residual of 24 per cent local employment other than farming. The majority of people employed locally are the proprietors of "one-man" businesses, such as coffee-shops, bars, grocery shops, hairdressing establishments and blacksmith businesses. There were, however, in 1973 about 65 major manufacturing establishments which were employing more than five persons each of them. For example a flour mill at Kythrea was employing 16 persons, either in the mill itself, or as delivery drivers, a food-processing factory at Yerolakkos was employing 21 persons, and the matches factory at Kokkinotrimithia was employing over 30 persons. The significance of the fringe

area as a source of employment is also indicated by comparing commuting rates with some other villages outside the fringe area but within the commuting zone of Nicosia. The commuting rate, for example, of Dhikomo is 80 per cent, Sykhari 90 per cent, Kondemenos 73 per cent, Tymbou 81 per cent, Thakhoni 85 per cent and Ayios Vasilios 80 per cent (Yiangoullis, 1972).

MOTIVES FOR MOVEMENT IN THE AREA

Questions included in the questionnaire were designed to measure the motives for movement in the fringe area, the degree of social integration and perception by the newcomers of their new environment. Table 3 provides the results of the "attitude test"; it is based on sample in-migrants household heads of Kokkinotrimithia, Lakatamia Kato, Mia Milea and Yeri villages. It should be emphasized that such "attitude tests" are crude measuring instruments, their chief function being to divide the people roughly into a number of broad groups with regard to a particular attitude. As Oppenheim (1966), states:

"They are techniques for placing people on a continuum in relative and not absolute terms".

Some of the questions were repeated in a different way. This was purposely done to probe consistency.

As indicated in Table 3, most of the newcomers moved and married in the fringe area; marriage usually takes place in association with the provision of a house as a dowry.

Why are all these newcomers getting married in the rural-urban fringe? The answer must be sought in a combination of factors. Figure 3 and questions 5 (Part A), and 5 (Part B), of Table 3, provide some clues. Most of the newcomers in the area, particularly those with a local urban-origin, are of average or low income, belonging in the skilled or semiskilled socioeconomic group. Since marriage is to a great extent associated with the "socially detestable dowry system", their chance in finding a bride is greater in the fringe area rather than the city where land values are soaring and parents look for higher status persons as their "sons-in-law". Because most of the newcomers have a "city job" the proximity of the fringe area to the local urban centre seems a decisive factor in selecting the area for their location (87.6 per cent of the respondents gave a positive answer). It is a response to the desire for the place of residence to be near the workplace. Finally, a motive for movement in the fringe area, at least for half of the newcomers, is the preference of the "rural environment", an environment probably reminiscent of the one they left (even newcomers with a local urban-

origin have mainly rural backgrounds). Respondents stressed such arguments as "people are friendly", "know each other", "the air is fresh", and "peace and tranquility". It should, however, be noticed that about 40 per cent of the household heads married in the fringe area would prefer a house in Nicosia, if that were feasible, a response suggesting coercion based on the economic circumstances of the respondent or the father-in-law, who provides the house, as related to the real estate market of Nicosia.

Social integration between newcomers and local people is very high with 89 per cent of the respondents participating in the coffee-shop and local club village life. This is probably due to the fact that both local people and newcomers are of about the same "status" (Fig. 3).

TABLE 3
Motives for Movement in the Fringe Area,
Perception and Social Integration

Characteristic or attitude	%
A MOTIVES FOR MOVEMENT	
1 Moved to the area because of marriage and endowed house was in the fringe	72.6
2 Building site values were lower than in the local urban centre (pertains to cases where the whole household moved to the fringe)	17.6
3 Lower rents than the nearby city (where the whole household moved to the fringe)	6.9
4 Exurbia motives	2.7
5 The proximity of the fringe to the local-urban centre was an influential motive	87.6
B PERCEPTION	
1 If it were feasible I would prefer the endowed house to be in the nearby city	37.0
2 I would prefer to live in the local urban centre if I were financially more affluent	46.6
3 I would prefer to continue living in the fringe area irrespective of socioeconomic status	52.2
4 Indecisive with regard to question 3	1.2
5 The environment of this village is preferred to the nearby urban environment	53.4
C INTEGRATION	
1 Integrate with local people in a coffee-house or local club, the "hubs of village social life"	89.0
2 Introvert, preferring only family ties	4.1
3 Looking mainly to the local urban centre for social contacts	6.9

It can be concluded from the discussion presented so far that the rural-urban fringe of Nicosia has two major functions: an **economic function** and a **psychological function**. An economic function has been defined by Mckie (1971), as "performance in meeting wants". In this case the fringe area is a reservoir of low-cost housing, due mainly to land values differential between the nearby city and the fringe, providing cheap accommodation to newcomers with average or below average income. Assuming that land values in Greater Nicosia will continue to rise and the current policy of discouraging decentralization continues, then depriving the fringe area of this economic function will result in more and longer journeys to work, more traffic congestion and other evils associated with high frequency journeys to work. The **psychological function** of the area is inferred from the fact that more than half of the newcomers are satisfied with their present environment. The psychological factor provides to the newcomer an environment similar to the one he left behind, in which he can adjust and integrate with local people easily, and in which anonymity is substantially absent. This psychological factor is an important one and must not be overlooked; physical and social planning must supplement each other.

COMPARISONS WITH PROTOTYPES IN WESTERN COUNTRIES

In most of the fringe areas of the West increasing affluence, efficient public transportation and rising rates of private car-ownership have combined to allow ever-growing numbers of city people to realize their choice to live in parts of the country that are still visually rural and yet also to commute into town for work and other purposes. This well established phenomenon is very well described by Clout (1972):

"One of the predominant features of settlements around major employment foci is their recent increase in population, principally as a result of in-migration by residents from nearby cities".

Blizzard (1954), in a case study on the rural-urban fringe of Williamsport, Pennsylvania, found that by place of origin 60 per cent of the families were local urban, 22 per cent were local rural and 18 per cent were nonlocal. Rodehaver (1947), found that seven out of ten families in Madison's rural-urban fringe had moved there from urban places. In the fringe of Hartford Metropolitan Area practically all of the newcomers had urban backgrounds and urban interests. Most of them moved to the rural areas from cities (McKain et. al. 1953).

In Cyprus the process of urbanisation of the rural-urban fringe

shows a reversal of what is happening in countries of North-West Europe and North America. Another variation lies in the type of "commuting". In the countries of North-West Europe and America "commuters" belong mainly to an "ex-urban" wealthy or middle-class who move to the countryside to enjoy its charms. In Cyprus, fringe dwellers usually originate from rural "push areas" or they are of local origin. A mental urbanisation is taking place because most of the working force finds employment in the nearby city. Whereas in the West most of the commuters are "fairly affluent professional people" in Cyprus it is the working-class that predominates, whether of the ex-urbanite type or of the non-local origin.

The social changes taking place in the fringe villages of Western countries are far more intensified than those taking place in Cyprus. Pahl (1965), provides this picture:

"The traditional world of a small, established middle-class with a large working-class population has been invaded by a new middle-class commuting element so that now the middle-class group is numerically the greater".

The traditional rural social structure arranged in a hierarchy has been modified and polarized into a more abrupt working-class/middle class dichotomy in such settlements. In some instances, e.g. Telvin settlement, social and spatial segregation is "one of the most important characteristics of the rural urban fringe" (Pahl 1965). In contrast to the British situation, Figure 3 demonstrates that the rural-urban fringe of Nicosia is undergoing only minor social changes while spatial segregation is unknown.

The variations in social features between Cyprus and countries of the West must be sought in social and economic differences. The process of urbanisation in Cyprus is only a recent phenomenon. In this early phase, it shows the same trends experienced by Western countries during the Industrial Revolution: a flight from the countryside to urban areas. The cities of the West were ill-prepared to receive the great influx of in-migrants and thus deplorable conditions were induced; hence, the flight to suburbia and exurbia in later stages. In Cyprus industrialisation was gradual and the cities were well prepared to receive the in-migrants. Economic coercion, however, and other factors, induced a number of rural migrants to move in the fringe area rather than the nearby urban centre. The limited flight to exurbia in Cyprus is associated with entirely different reasons than those encountered in Western countries. **It is not the affluent but the lower income groups that move to the fringe.** People belonging in these groups can easily integrate with the local population and therefore social differentiation and segregation are either minor or non-existent.

APPENDIX A

THE HALL-JONES SCALE OF OCCUPATIONAL PRESTIGE FOR MALES

Class 1: Professionally Qualified and High Administrative

Accountant	Marine surveyor
Analytical chemist	Medical officer of health
Architect	M.P.
Army:	Navy:
Major and upwards	Lt. Cmdr. upwards
Auditor	Planter
Bank manager	Police:
Barrister	C/Suptd., D/Cdr., Cdr.,
Civil Service:	Asst/Commr., Chief Constable
Administrative	Procurator fiscal
C.E.O.'s, chief inspector of taxes,	Quantity Surveyor
inspector of schools	Race horse owner
Colliery manager	Research scientist
Consultant (engineer, doctor, etc.)	Royal Air Force: Wing/Cdr.
Dental surgeon	and upwards
Dentist (qualified)	Sheriff's substitute
Designer, aircraft	Shipowner
Diplomat	Solicitor
Director of Education	Stockbroker
Doctor	Sugar refiner
Editor	Surveyor (qualified)
Engineer (qualified)	Town Clerk
Geologist	Treasurer, local authority
Headmaster (sec. school or prep. school)	Underwriter, Lloyds
Insurance actuary	University Lecturer
Land or farm agent or steward	Valuation officer
Landowner	Veterinary Surgeon (qualified)

Class 2: Managerial and Executive (with Some Responsibility for Directing and Initiating Policy)

Air pilot	taxes (higher grade),
Army:	inspector of taxes
Captain and below	Commercial artist
(Commissioned)	Commercial scientist
Articled clerk	Dentist (unqualified)
Bank clerk (senior)	Divisional Education Officer
Chiropodist	Headmaster (elem. school)
Civil Service:	Headmaster (indust. school)
S.E.O.'s, inspector of	Head postmaster

House property manager
 Minister (nonconformist)
 Navy: Lieut. and below
 (commissioned)
 Optician (qualified)
 Patent agent
 Personnel manager
 Pharmacist
 Police:
 Chief Inspector, Suptd.
 Psychiatric social worker

Restaurateur
 Royal Air Force:
 Squadron leader and below
 (commissioned)
 Sanitary engineer
 Sanitary surveyor
 Settlement warden
 Teacher (sec. sch. or public
 school)
 Veterinary practitioner
 (unqualified)

**Class 3: Inspectional, Supervisory, and Other Nonmanual
 (Higher grade)**

Advertising agent
 Army:
 W.O.
 Bank clerk (junior)
 Boarding out officer
 Branch manager
 Catering officer
 Canal boat proprietor
 Civil Service:
 E.O.'s Technical Officer,
 exptl. officer,
 collector, tax officer
 (higher grade)
 Church worker
 Clerk of works
 Club master (warden)
 Colliery engineer
 Commercial traveller
 Committee clerk
 Contractor
 Dispensing chemist (employed)
 Dog breeder
 Draughtsman (qualified)
 Drug and food inspector (L.G.)
 Entertainment organizer
 Farm bailiff or griever
 Forwarding agent
 Goods agent (railway)
 Head clerk
 Horse breeder
 Hotel keeper or manager
 Industrial chemist
 Inspector (insurance,
 engineering)

Jockey
 Journalist or reporter
 Librarian (assistant,
 qualified)
 Marine engineer
 Mental health officer
 Mental nurse (qualified)
 Navy: W.O.
 Overman, colliery
 Permanent way inspector
 Photographer
 Physiotherapist
 Police:
 Inspector
 Postmaster
 Probation officer
 Radiographer
 Royal Air Force: W.O.
 Rate fixer
 Rating officer
 Royal Marines:
 Sgt. Major,
 Q.M. Sgt.
 Salesman
 Sanitary inspector
 Shorthand writer
 Station master
 Stockbroker's clerk
 Teacher (elem. sch. jnr. tech.,
 etc.)
 Technician (B.B.C.)
 Undertaker
 Youth employment officer
 Youth organizer

Class 4: Inspectional, Supervisory, and Other Nonmanual Lower Grade)

Accountant's clerk	Librarian (unqualified)
Advertising copywriter	Licensed victualler
Advertisement drawer	Market gardener
Army:	Masseur (employed)
Sgt. and S./Sgt.	Merchant Navy:
Architect's apprentice	Radio Operator
Auctioneer	Cadet
Bank detective	Midshipman
Book-keeper	Navy:
Butler	P.O. and C.P.O.
Chef or hotel cook	Police:
Chemical sampler	Sergeant
Civil Service:	Publican
M.C.O.'s	Radio Officer (civil airways)
Assistance Officer	Royal Air Force:
Club leader	Sgt. and S/Sgt.
Coast Guard	Road safety officer
Costing clerk	Relieving officer
Cricketer (professional)	Religious brother
Customs officer	Sampler in brewery
Deputy overman	School Attendance Officer
Draughtsman (apprentice)	Shop supervisor
Erection engineer (unqualified)	Shop walker
Estimating clerk	Signal inspector
Film cutter	Stationer
Footballer (professional)	Sub-Postmaster
Furrier	Surveyor's assistant
Insurance agent (industrial)	Toy designer

Class 5(a): Routine Grades of Nonmanual Work

Booking clerk	Hairdresser
Caretaker	Head Porter
Cashier:	Librarian, assistant
Box Office, Shop,	(unqualified)
Undefined	Police:
Civil Service:	Constable, special
C.O.'s and T.C.'s	Constable, cadet
Asst. Collector	Post Office clerk
Tax officer	Prison officer (Warden)
Clerk (routine)	Provident collector
Commissionaire	Railway detective
Dance band musician	Rate collector
Draughtsman (tracer- unqualified)	Rent collector
	Sheriff's assistant

Shop assistant:

Chemist, Confectioner,
Draper, Florist, Grocer,
Ironware, Furniture,
Stationer, Tailor

Storekeeper

Telephone operator
Waiter
Window dresser

Class 5(b): Skilled Manual

Ambulance Man

Annealer

Apprentice (skilled trade)

Army:

Cpl. and L/Cpl.

Baker

Blacksmith

Boiler maker

Boiler smith

Book binder

Book maker

Boot maker

Boot repairer

Brass finisher

Brass moulder

Bricklayer

Builder (employed craftsman)

Bus driver

Butcher

Cab driver

Cabinet maker

Carpenter

Carpet weaver

Cap maker

Capstan setter

Caster (dies)

Chain maker

Charge hand

Chauffeur

Checker

Chimney sweep

Clicker

Cloth lapper

Coach builder

Coachman

Colliery electrician

Colliery engineer

Colour mixer (if skilled)

Compositor

Concrete fencer

Cook

Cooper

Copper smith

Cord wainer

Cotton weaver

Cowman

Crane driver

Currier

Cutler

Decorator

Dental mechanic

Dock gateman

Die-setter

Electrician (employed
craftsman)

Engine driver

Engine stoker

Engineer (employed craftsman)

Engraver

Excavator driver

Farm worker (skilled)

Fitter

Forester

French Polisher

Fur finisher

Furnaceman (chemicals)

Galvanizer

Gamekeeper

Ganger

Gardener

Gasfitter

Glass blower

Glazier

Grainweigher

Groom

Gunsmith

Harness weaver

Head gardener

Horse dealer

Horseman

Hosiery trimmer

Inspector (Gas Co., transport
etc.)

Instrument Maker

Ironmoulder
Iron or steel dresser
Iron driller
Jewel cast maker
Joiner
Laboratory assistant
Landscape gardener
Lathe setter
Leather dresser
Leather splitter
Lock gateman
Lodge keeper
Lorry driver (long distance)
Machine repairer
Maintenance fitter
Maltster
Marble polisher
Mason
Mechanic (skilled)
Medical glass engraver
Merchant Nany:
 Apprentice
Miller
Millwright
Mole catcher
Motorman
Motor engineer
Motor mechanic
Moulder
Musical instrument repairer
Navy:
 Ldg. Seaman
Newsagent
Nurseryman
Operative (skilled)
Painter
Paint mixer
Paint sprayer
Panel beater
Paviour
Pattern maker
Pit repairer
Plasterer
Plater (iron and steel)
Plumber
Portmanteau maker
Potter
Printer's cutter
Printer
Puddler (metals)

Quarryman
Radio mechanic (skilled)
Railway crossing keeper
Railway guard
Railway signalman
Range fitter
Record maker
Retort builder
Rivetter
Ropemaker
Ropespinner
Royal Air Force:
 Cpl. and LAC.
Sailmaker
Seedsman
Shepherd
Ship's plater
Ship's carpenter
Ship's fireman
Ship's rigger
Shipwright
Signwriter
Silk weaver
Silversmith (skilled craftsman)
Slater
Slaughterer
Slinger
Spinner
Stage hand
Steel cutter
Steeple - Jack
Stillman
Studgroom
Sweep
Talleyman (checker)
Tailor
Tanner
Teazer (glass)
Telegraph linesman
Thatcher
Tilemaker
Tinsmith
Toolmaker
Toolsetter
Toymaker (skilled)
Tractor driver
Turn cock
Turner
Upholsterer
Valve tester

Vulcanizer
Waggon examiner
Waggon painter
Watchmaker and repairer
Waterproof coat maker

Weaver
Welder
Wheelwright
Woodman
Wool/worsted spinner

Class 6: Manual, Semi-skilled

Agricultural worker, farm
servant
Armature winder
Army:
Private
Artificial flowermaker
Assembler
Baker's assistant
Bargeman
Barman
Basketmaker
Billiard marker
Blacksmith's striker
Boilerman
Boot machinist
Brass bedstead maker
Brass wire worker
Brickmaker
Brushdrawer
Builder's scaffolder
Buttonhole cutter
Bus conductor
Butcher's assistant
Canvasser
Capstan operator
Carpenter's mate
Car park attendant
Carpet finisher
Carter
Catering assistant
Closer
Cloth finisher
Coal conveyor
Coal hewer
Coal trimmer
Core maker
Craneman (crane driver)
Darner
Deliveryman
Dental mechanic's assistant
Drayman
Driller (brush factory)

Dyer
Electrician's mate
Engineman
Farmworker (farm labourer)
File Setter
Finisher (laundry)
Fisherman
Fitter's mate
Furniture remover (employee)
Garage hand
Gasmantle maker
Gownpresser
Grain storeman
Grinder
Hall porter
Hammerman
Hand sewer
Holder-on
Hurdle maker
Ironer or clothes presser
Lathworker
Lighterman
Letter stamper
Lorry Driver (short distance)
Machine operator
Machinist
Maker (wooden-box)
Meter reader
Milkman
Muslin darner
Navy:
A.B.
Office boy
Operative (semi-skilled)
Ostler
Packer
Packing case maker
Pearl stringer
Pirn winder
Pit headman
Plastic welder
Platelayer

Polisher
 Porter (Town Hall)
 Postman
 Post Office sorter
 Presser (tailor's)
 Printer's feeder
 Railway engine cleaner
 Railway linesman
 Railway porter
 Roadsman
 Rope slicer
 Royal Air Force:
 A.C. 2 and A.C. 1
 Sawyer
 Seaman
 Serrator
 Sexton
 Sheet metal worker
 Ship plater's helper
 Shop Hand:
 Greengrocer, Butcher,
 Fishmonger
 Shunter
 Stableman

Class 7: Manual, Routine

Bag sewer
 Bath attendant
 Bottler
 Bottle washer
 Boatman (canal)
 Bolt screwer
 Book folder
 Boxmaker (carboard)
 Builder's labourer
 Bundle maker
 Cameraman (street)
 Canteen assistant
 Carman (shunter)
 Carpet cleaner
 Carpet factory worker
 Cattle drover
 Cellarman
 Cleaner
 Coal porter
 Costermonger
 Counterhand
 Deal porter
 Despatch labourer

Stevedore
 Stoker
 Storeman
 Surfacement (railway or road)
 Switchman
 Telegraph Boy
 Ticket collector
 Tobacco spinner
 Timber cutter
 Tin pricker
 Town porter
 Traction engine driver
 Trawlerman
 Trimmer (coal upholstery, etc.)
 Van driver
 Warehouseman
 Warehouse worker
 Wheeltapper
 Wood machinist
 Wood sorter
 Worker:
 Chemical, Leather, Starch,
 Steel, Rope, Rubber, etc.

Distillery worker
 Docker
 Drainer
 Drain pipe layer
 Errand Boy
 Factory hand (routine)
 Factory worker
 Folder
 Gasworker
 Hawker (dealer)
 Houseboy
 Labourer
 Lamp cleaner
 Lamplighter
 Lavatory attendant
 Leather carrier
 Lift attendant
 Loader
 Lorryman
 Machine minder (routine)
 Messenger
 Navy
 Paper seller

Porter
Presshand
Publican's assistant
Quay labourer
Rabbit seller
Railway yardman
Refuse collector
Roadman

Roadsweeper
Scavenger
Shawcard moulder
Sorter (not P.O.)
Stacker
Street trader
Tar sprayer
Vanman

Occupations whose allocation depends on criteria additional of the nature of the occupation itself, e.g. number of persons employed or supervised, size of farm, etc.

Watchman
Actor 1/4
Artist 1/2
Author 1/2
Bookie 4/5 (a)
Business owner, director,
secretary or manager:
Buyer:
100+ hands 1
10-99 " 2
3-9 " 3
1 or 2 man business,
skilled trade 4
1 or 2 man business,
other 5(a)
Clergyman 1/2
Clerk (local authority) 4/5(a)
Farmer:
250+ acres 1
100-249 acres 2
10-99 acres 3
Up to 9 acres 4
Foreman
20+ hands 3
3-19 hands 4
1 or hands 5(b)

Haulage contractor 2/3
Hospital secretary 1/2
Librarian (head) 1/2
Maintenance engineer 3/4
Master mariner 1/3
Merchant (wholesale):
Grading one higher than
business owner throughout.
Merchant Navy:
Captain 1/3
Physical training teacher 3/4
Poultry farmer 3/4
Private tutor, coach, 2/3
Professional writer 1/3
Quarry master 1/2
Reader, publisher's 1/2
Registrar 2/3
Scaffolder 5(b)/6
Secretary of voluntary organization 1/3
Shopkeeper 1/5(a) (see
business owner)
Statistician 1/2
Textile designer 2/3
Trade union official 3/4
Welfare officer 1/2

Amendments

The following amendments have been made:

1. The seven socioeconomic classes have been condensed into five. Class 1 and 2 have been combined together to form Class 1. Class 3 and 4 have been incorporated to form Class 2. Class 5(a) has been up-graded into Class 3. Class 5(b) and 6 have been grouped together to form Class 4 and Class 7 has been up-graded into Class 5.
2. Farm labourers, porters and shepherds were downgraded in the lowest class because of the low prestige given to them in Cyprus.
3. A farmer with over 100 donums of agricultural land was allocated in Class 1, with 61-99 donums in Class 2, 21-60 in Class 3 and up to 20 in Class 4.

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ΓΕΩΓΡΑΦΙΑ ΚΑΙ ΔΗΜΟΣΙΟΓΡΑΦΙΑ*

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ΕΙΣΑΓΩΓΗ

Πολλοί φίλοι συχνά με ρωτούν πώς καταφέρνω να συνδυάζω τις ειδικότητες της Γεωγραφίας και Δημοσιογραφίας, μιὰ και από πρώτη ματιά φαίνονται άσχετες και άπομακρυσμένες ή μιὰ από την άλλη. Μιὰ προσεκτική, όμως, εξέταση εύκολα αποδεικνύει, πώς συμβαίνει τὸ αντίθετο. "Ότι δηλ. οἱ δυὸ ειδικότητες βρίσκονται πολὺ κοντὰ ἢ μιὰ στήν ἄλλη! Γι' αὐτὸ και δὲ δυσκολεύομαι πολὺ νὰ τοὺς πείσω, πὼς ἡ καλὴ γεωγραφικὴ κατάρτιση εἶναι ἀπαραίτητη προϋπόθεση γιὰ ἓνα σωστὸ και ὀλοκληρωμένο δημοσιογραφικὸ ρεπορτάζ, ἰδιαιτέρα ὅταν αὐτὸ ἀναφέρεται σὲ θέματα γεωπολιτικοῦ, γεωοικονομικοῦ και παγκόσμιου γενικὰ ἐνδιαφέροντος.

Ἀντίθετα με ὅτι πολλοὶ πιστεύουν, ἡ Γεωγραφία δὲν εἶναι κάτι αὐστηρὰ καθωρισμένο μέσα σὲ στεγανὰ πλαίσια, πὸν μαθαίνεται στὰ σχολεῖα μας μιὰ κι' ἔξω και μένει κτῆμα μας γιὰ πάντα¹. Ἡ οὐσία και ἀξία τῆς Γεωγραφίας ἐγκραται στὸ ὅτι μᾶς δίδει τὴν ἱκανότητα νὰ μελετοῦμε τὰ κοινωνικά, οἰκονομικά, πολιτικά, πολιτιστικά και φυσικά φαινόμενα τοῦ οὐγγχρονου μας κόσμου, ὅπως δημιουργοῦνται και ἐξελίσσονται στὸ χῶρο πὸν διαδραματίζονται και σὲ ἀλληλοεξάρτηση τὸ ἓνα με τὸ ἄλλο. Ὁ δημοσιογράφος πὸν θὰ ἀσχοληθῆ με τὰ γεγονότα αὐτὰ πρέπει νὰ εἶναι σὲ θέση νὰ ἀντιλαμβάνεται και ἀναλύει τοὺς γεωγραφικοὺς παράγοντες (ἀνθρώπινους και φυσικοὺς) πὸν τὰ συνθέτουν, γιὰ νὰ εἶναι ὀρθὲς οἱ περιγραφές, παρατηρήσεις, κρίσεις και προβλέψεις του.

ΓΙΑΤΙ Ο ΔΗΜΟΣΙΟΓΡΑΦΟΣ ΠΡΕΠΕΙ ΝΑ ΕΧΕΙ ΓΕΩΓΡΑΦΙΚΗ ΚΑΤΑΡΤΙΣΗ

Ὁ δημοσιογράφος, λοιπὸν, ἐκτὸς ἀπὸ τίς ἄλλες εἰδικές, γενικές και τεχνικές γνώσεις πὸν πρέπει νὰ κατέχει γιὰ νὰ μπορεῖ νὰ ἀντεπεξέρχεται στὸ ἐπίμοχθο, ὑπεύθυνο και ὑψηλὸ ἔργο του, πρέπει νὰ εἶναι και γεωγραφικά καταρτισμένος, ὥστε νὰ μπορεῖ νὰ ἐρμηνεύει σωστὰ τὰ παγκόσμια ἢ τοπικά γεγονότα και φαινόμενα.

Ἡ ἐπιφάνεια τῆς γῆς (Ξηρὰ και θάλασσα) και ἡ ἀτμόσφαιρα πὸν τὴν περιβάλλει ἀποτελοῦν τὸ σκηνικὸ ὅπου διαδραματίζονται τὰ διάφορα φυσικά και ἀνθρώπινα γεγονότα, πὸν ἀποτελοῦν πηγές εἰδήσεων γιὰ τὸ δημοσιογράφο. Τίς περισσότερες φορές τὰ διάφορα αὐτὰ

* Ἡ μελέτη ἀποτελεῖ περίληψη διαλέξεων τοῦ συγγραφέα στὴ Σχολὴ Δημοσιογραφίας και Δημοσίων Σχέσεων, στὰ θέματα Ἐπικοινωνία και Γεωγραφία.

γεγονότα επηρεάζονται σε μικρό ή μεγάλο βαθμό από τη φύση και το είδος του σκηنيκού όπου διαδραματίζονται.

"Ωστε ο δημοσιογράφος για να νάναι σε θέση να αντιληφθεί, αναλύσει και έρμηνεύσει όρθα τὰ διάφορα γεγονότα πρέπει να γνωρίζει καλά τὸ σκηνικό όπου διαδραματίζονται. Όφείλει, δηλαδή, να γνωρίζει τὰ βασικά φυσικά χαρακτηριστικά τῆς ἐπιφάνειας τῆς γῆς, τὰ ιδιάζοντα χαρακτηριστικά (φυσικά και ἀνθρώπινα) τῶν διαφόρων περιοχῶν τῆς γῆς και πῶς αὐτὰ επηρεάζουν τὴ ζωὴ τῶν κατοίκων τῶν περιοχῶν τούτων. Όφείλει, ἐπίσης, να γνωρίζει πῶς ὁ ἄνθρωπος προσαρμόζεται στις φυσικές συνθήκες τοῦ περιβάλλοντός του και πῶς με τὴ σειρά του επηρεάζει και διαμορφώνει τις συνθήκες αὐτές, ὥστε να προσαρμόζονται περισσότερο στις ἀνάγκες του. Πρέπει, δηλαδή, για κάθε τι πού ἀκούει και ἀντιλαμβάνεται και πού διαδραματίζεται σε ὠριμένο χῶρο να βρίσκει τις αἰτίες πού τὸ προκαλοῦν.

Πολλὰ παγκόσμια και τοπικά γεγονότα ἢ φαινόμενα ἔχουν, πολλές φορές, σὰν αἷτια γεωγραφικούς λόγους και παράγοντες, πού δὲν ἀποκαλύπτονται με τὴν πρώτη ματιά. Τὸ Μεσανατολικὸ πρόβλημα π.χ. εἶναι σε μεγάλο βαθμὸ πρόβλημα πού ὀφείλεται σε γεωγραφικούς παράγοντες. "Αν ἐξετάσωμε τοὺς φυσικούς γεωγραφικούς παράγοντες (ἐρημικές ἐκτάσεις, ἔλλειψη νεροῦ) και τὴν προσπάθεια προσαρμογῆς τῶν ἀνθρώπων σ' αὐτοὺς στα πλαίσια ἐνός περιορισμένου ἀποδοτικοῦ χῶρου, τὴν ὕπαρξη πλούσιων κοιτασμάτων πετρελαίου, τὴ σημασία τῶν θαλάσσιων ἐπικοινωνιῶν, τὰ συνοριακά και θρησκευτικά προβλήματα, θὰ εἴμαστε σε θέση να ἀντιληφθοῦμε και ἀναλύσωμε ὀρθότερα τις κυριώτερες αἰτίες τοῦ μακροχρόνιου τούτου πολιτικοῦ προβλήματος.

Μερικοί εἰσηγοῦνται σὰ λύση τοῦ Κυπριακοῦ προβλήματος τὴ γεωγραφική διχοτόμηση. "Αν ἐξετάσωμε τοὺς γεωγραφικούς παράγοντες πού συνθέτουν τὸ πρόβλημα εἶναι δυνατό να μιλοῦμε για τέτοια λύση; Ὑπάρχουν δηλ. οἱ κατάλληλες γεωγραφικές συνθήκες (μορφολογία τοῦ ἐδάφους, φυσικοί πόροι, κατανομή ἰδιοκτησίας και πληθυσμοῦ, φυσικά σύνορα κλπ.), πού να ἐπιτρέπουν τὸ διαχωρισμὸ τῆς Κύπρου σε δυὸ αὐτοτελεῖς και βιώσιμες γεωγραφικές περιοχές;² Τις σκέψεις και ἐρωτήσεις αὐτές, καθὼς και τις σωστὲς ἀπαντήσεις, πρέπει να νάναι σε θέση να θέτει και ἀναλύει ἕνας καλά καταρτισμένος δημοσιογράφος, ὥστε να μὴ δέχεται παθητικά ὅτι οἱ ἄλλοι θέλουν ἢ εἰσηγοῦνται.

Πολλὰ δυστυχήματα (ὀδικά, θαλάσσια, ἀεροπορικά, θεομηνίες κλπ.) ὀφείλονται πολλές φορές σε γεωγραφικούς παράγοντες, ὅπως ἡ μορφολογία τοῦ ἐδάφους, ἡ ὀλισθηρότητα τοῦ ἐδάφους, ἡ καθίζηση ἢ ἀνίζηση τοῦ ἐδάφους, οἱ κατακρημνίσεις, οἱ καιρικές συνθήκες, οἱ ἐπικρατοῦντες ἄνεμοι, οἱ παλίρροιες, ἡ ὕπαρξη ἠφαιστειῶν κλπ. Τὸ

ἴδιο συμβαίνει πολλές φορές καὶ μὲ πολλές ἀρρώστειες καὶ ἐπιδημίες.³ Πολλά, λοιπόν, γεγονότα τῆς καθημερινῆς ζωῆς, πού ἀποτελοῦν πηγὴν εἰδήσεων γιὰ τὸν δημοσιογράφο, ὀφείλονται σὲ γεωγραφικούς παράγοντες, πού πρέπει νὰ ἀναγνωρίζει καὶ ἀντιλαμβάνεται. Γι' αὐτὸ ἡ γνώση βασικῶν στοιχείων τῆς Παγκόσμιας Γεωγραφίας (Φυσικῆς, Πολιτικῆς, Οἰκονομικῆς, Πολιτιστικῆς) εἶναι ἀπαραίτητη.

Μὲ τὰ πιὸ πάνω δὲν σημαίνει, ὅτι ὁ δημοσιογράφος πρέπει νὰ ἀπομνημονεύει ἀρκετὲς γεωγραφικὲς γνώσεις, ὥστε νὰ καταντήσει κινητὴ γεωγραφικὴ ἐγκυκλοπαίδεια. Κάθε ἄλλο. Βιβλία ἀναφορᾶς, στοιχεῖα καὶ ἀριθμούς βρίσκει εὐκόλα ἓνας στὴ βιβλιοθήκη του. Ἐκεῖνο πού ἔχει σημασία εἶναι ἡ ἀπόκτηση καὶ ἐμπέδωση **γ ε ω γ ρ α φ ι κ ῆ ς σ κ έ ψ ε ω ς κ α ι κ ρ ί σ ε ω ς**. Ἡ σκέψη αὐτὴ εἶναι τὸ προῖόν τῆς γνώσεως τῶν διαφόρων γεωγραφικῶν παραγόντων, πού ἐπηρεάζουν καὶ συντελοῦν στὴ διαμόρφωση ἐνός γεγονότος, καὶ μπορεῖ νὰ εἶναι φυσικοὶ καὶ ἀνθρώπινοι. Ὁ γεωγραφικὸς ἔλεγχος, λοιπόν, καὶ ἡ γεωγραφικὴ ἐπίδραση εἶναι βασικῆς σημασίας στὴ γένεση καὶ ἐξέλιξη διαφόρων γεγονότων (φυσικῶν καὶ ἀνθρώπινων). Ὁ καλὸς δημοσιογράφος δὲν πρέπει νὰ ἀρκεῖται στὴν ἀπλὴ παράθεση γεγονότων ἢ στὴν περιγραφή μιᾶς καταστάσεως, ἀλλὰ νὰ ἐρμηνεύει καὶ ἀναλύει τίς αἰτίες τῶν γεγονότων, πού πολλές φορές ὀφείλονται σὲ γεωγραφικούς παράγοντες.

Πῶς μποροῦμε, ὅμως, νὰ ἀποκτήσουμε γεωγραφικὴ σκέψη καὶ κρίση;

ΟΙ ΓΕΩΓΡΑΦΙΚΟΙ ΠΑΡΑΓΟΝΤΕΣ ΤΩΝ ΕΙΔΗΣΕΩΝ

Γιὰ νὰ εἶμαστε σὲ θέση ν' ἀπαντήσουμε στὴν πιὸ πάνω ἐρώτηση πρέπει νὰ ἀσχοληθοῦμε πρῶτα σύντομα μὲ τοὺς κύριους γεωγραφικούς παράγοντες πού ἐπηρεάζουν τὴ διαμόρφωση ἐνός χώρου—σκη-νικοῦ, πού στὴ συνέχεια ἐπηρεάζει τὴν ἐξέλιξη τῶν γεγονότων πού διαμορφώνονται σ' αὐτό. Οἱ πιὸ βασικοὶ ἀπ' αὐτοὺς εἶναι: Ἡ **γ ε ω γ ρ α φ ι κ ῆ θ έ σ η** (γεωγραφικὸ μῆκος καὶ πλάτος — θέση στὴν ὑδρόγειο σφαῖρα — σημασία ἀπὸ στρατηγικῆς, γεωπολιτικῆς, οἰκονομικῆς καὶ πολιτικῆς ἀπόψεως κλπ.). Τὰ **φ υ σ ι κ ᾶ χ α ρ α κ τ η ρ ι σ τ ι κ ᾶ** (μορφολογία τοῦ ἐδάφους, βουνά, πεδιάδες, λίμνες, ποταμοί, θάλασσες, ἀκτές, φυσικὴ θλάσηση, ὀρυκτὰ καὶ φυσικὸς πλοῦτος, κλίμα καὶ ἔδαφος κλπ.). Οἱ **ἄ ν θ ρ ω π ο ι** (φυλὴ, θρησκεία, παράδοση, ἥθη καὶ ἔθιμα, πολιτικὴ ὀργάνωση, ἀσχολίες, οἰκονομικὴ κατάσταση κλπ.).

Οἱ πιὸ πάνω γεωγραφικὲς γνώσεις θὰ μᾶς δώσουν τὴν ικανότητα νὰ ἀναλύουμε τὰ σύγχρονα γεγονότα ἀπὸ τὴν ἄποψη,

(1) Τοῦ γεωγραφικοῦ σκηνικοῦ,

- (2) Τῶν τοπικῶν διαφορῶν (ἰδιαζόντων χαρακτηριστικῶν) καὶ
- (3) Τοῦ ἀλληλοσχετισμοῦ τῶν φυσικῶν, βιοτικῶν καὶ πολιτιστικῶν στοιχείων, πού συνθέτουν τὸ χαρακτηριστικὸ σύστημα ζωῆς καὶ περιβάλλοντος τῆς περιοχῆς, ὅπου διαδραματίζονται τὰ γεγονότα.

Οἱ πιὸ πάνω θεωρητικὲς ἀρχὲς βρίσκουν ἐφαρμογὴ στὴν καθημερινή μας ζωὴ, καθὼς διαβάζουμε τὴν ἔφημερίδα μας, ἢ καθὼς παρακολουθοῦμε τίς εἰδήσεις ἀπὸ τὸ ραδιόφωνο καὶ προπαντὸς ἀπὸ τὴν τηλεόραση.

1. Ἡ Γεωγραφικὴ θέση.

Ὁ προσδιορισμὸς καὶ ἡ τοποθέτηση στὸ χάρτη ἐνὸς γεγονότος μᾶς βοηθᾷ νὰ ἀντιληφθοῦμε πολλὰ ἀπὸ τὰ στοιχεῖα πού τὸ συνθέτουν, ἢ πολλὲς ἀπὸ τίς αἰτίες πού τὸ δημιουργοῦν. Ἡ σπουδαία στρατηγικὴ γεωγραφικὴ θέση ἐνὸς τόπου, ὅπου συγκεντρώνονται οἱ βλέψεις καὶ τὰ ἐνδιαφέροντα ἢ διασταυρώνονται καὶ συγκρούονται τὰ συμφέροντα πολλῶν κρατῶν, ἀποτελεῖ κάποτε τὴν κύρια αἰτία τοπικῶν συγκρούσεων, ἢ ἄλλων γεγονότων. Τέτοια σύγχρονα προβλήματα, πού ἐπηρεάζονται σὲ μεγάλο βαθμὸ ἀπὸ τὴν στρατηγικὴ καὶ γεωπολιτικὴ σημασίαν τῆς γεωγραφικῆς θέσεως τῶν χωρῶν ὅπου διαδραματίζονται, εἶναι τὸ Κυπριακὸ, τὸ Μεσανατολικὸ, τὰ προβλήματα τοῦ Λιβάνου καὶ τοῦ Αἰγαίου.

2. Ἡ Ὁργάνωση τῶν Τοπικῶν Διαφορῶν.

Ἄλλο βασικὸ γεωγραφικὸ στοιχεῖο, πού πρέπει νὰ χουμε στὸ νοῦ ὅταν ἀναλύουμε τὰ σύγχρονα γεγονότα, εἶναι ἡ κατανόηση τῶν σχέσεων τῶν διαφόρων φαινομένων, πού παρουσιάζονται πιὸ ἔντονα σὲ μιὰ ὀρισμένη περιοχὴ τῆς γῆς, ἢ πού παρουσιάζονται ὀργανωμένα σ' ἓνα σύνολο κοινῶν ἐπιδιώξεων καὶ σκοπῶν.⁴

Τέτοια ὀργανωμένα σύνολα ἀποτελοῦν οἱ διάφορες οικονομικὲς, πολιτικὲς, στρατιωτικὲς καὶ ἄλλες συμμαχίες ἢ συνασπισμοί, πού ἀναφέρονται καθημερινὰ στίς εἰδήσεις. Ὑπῆρξαν μερικοὶ πού ὀραματίστηκαν πρὶν ἀπὸ μερικὲς δεκαετίες, τὸν Ὀργανισμὸ Ἠνωμένων Ἐθνῶν σὰν ἓνα αὐτοτελῆ καὶ ἰσχυρὸ ὀργανισμὸ, πού θὰ μπορούσε νὰ ὀδηγήσει στὴν ἐνοποίηση καὶ εἰρήνευση τοῦ κόσμου.

Τοῦτο δὲν εἶναι καθόλου ρεαλιστικὸ ἀπὸ γεωγραφικῆς ἀπόψεως. Ἄφοῦ οἱ χῶρες καὶ οἱ λαοὶ διαφέρουν ἀπὸ περιοχὴ σὲ περιοχὴ, μὲ τὸν ἴδιο τρόπο διαφέρουν καὶ οἱ ἐνέργειες, τὰ ἦθη καὶ ἔθιμα καὶ ὁ τρόπος σκέψεώς τους. Τὰ κράτη ἐκεῖνα πού ἔχουν σὰν κοινὸ παρονομαστὴ ἔθνικά, οικονομικά, θρησκευτικὰ ἢ πολιτικὰ χαρακτηριστικὰ ὀργανώνονται μαζί σὲ τοπικὲς ἢ περιφερειακὲς ὀργανώσεις, ὅπως τὸ

ΝΑΤΟ, τὸ Σύμφωνο τῆς Βαρσοβίας, ὁ Ἀραβικὸς Σύνδεσμος, ἡ Εὐρωπαϊκὴ Κοινὴ Ἀγορὰ κλπ.

3. Ἡ συσχέτιση τῶν γεωγραφικῶν στοιχείων στὶς εἰδήσεις.

Γίνεται γενικὰ παραδεκτό, πὼς μερικές ἀνθρώπινες ἐνέργειες ἢ μιὰ χαρακτηριστικὴ συμπεριφορὰ τῶν κατοίκων μιᾶς χώρας ἢ μιᾶς περιοχῆς, συνδέονται κατὰ κάποιον τρόπο μὲ τὸ φυσικὸ περιβάλλον τῆς χώρας ἢ τῆς περιοχῆς ἐκείνης.⁵ Στὴν προσπάθειά μας νὰ ἀναλύσουμε καὶ ἐρμηνεύσουμε ὀρθὰ τίς ἐνέργειες αὐτές, πρέπει ὅπωςδήποτε νὰ γνωρίσουμε τίς σχέσεις, ἀλληλοεξαρτήσεις καὶ ἀλληλεπιδράσεις τῶν φυσικῶν, βιοτικῶν, κοινωνικῶν, οικονομικῶν καὶ πολιτιστικῶν παραγόντων, πού ἐμπλέκονται καὶ συσχετίζονται μὲ τέτοιο τρόπο, ὥστε νὰ συνθέτουν τὸ ξεχωριστὸ χρῶμα τῆς περιοχῆς ἐκείνης.

Γιὰ νὰ εἶναι π.χ. ἓνας δημοσιογράφος σὲ θέση νὰ ἐκτιμήσει καὶ ἀναλύσει ὀρθὰ τὸ αἴτημα τῆς ἐπαρχίας Κεμπέκ τοῦ Καναδᾶ γιὰ ἀνεξαρτησία καὶ πλήρη διαχωρισμό, πρέπει νὰ γνωρίζει τίς τοπικὲς φυσικὲς, οικονομικὲς, πολιτικὲς, φυλετικὲς, ἐθνικὲς καὶ θρησκευτικὲς συνθήκες πού συνθέτουν τὸ πρόβλημα, καθὼς καὶ τίς ἐπιπτώσεις πού θᾶχει τέτοια ἐνέργεια τόσο στοὺς κατοίκους τῆς περιοχῆς, ὅσο καὶ σ' ὁλόκληρο τὸν Καναδᾶ.

ΓΕΩΓΡΑΦΙΑ ΚΑΙ ΟΡΘΗ ΕΙΔΗΣΕΟΓΡΑΦΙΚΗ ΕΝΗΜΕΡΩΣΗ

Ἡ σύγχρονη δημοσιογραφία μὲ τὰ τεχνικὰ μέσα πού ἔχει στὴ διάθεσή της (τύπος, ραδιόφωνο, τηλεόραση, τηλετύπου, τηλεπικοινωνιακοὶ δορυφόροι κλπ.) καλύπτει σχεδὸν ὅλες τίς εἰδήσεις μὲ γεωγραφικὸ ἐνδιαφέρον, πού διαδραματίζονται σ' ὅλα τὰ γεωγραφικὰ μήκη καὶ πλάτη.

Τὸ πρόβλημα γιὰ κάθε ἄτομο πού ἐνδιαφέρεται στὴ γεωγραφικὴ πλευρὰ τῶν παγκόσμιων γεγονότων εἶναι νὰ μπορεῖ πρῶτ' ἀπ' ὅλα νὰ ξεχωρίζει τὴν εἰδησεογραφία ἢ σχολιογραφία τῶν μέσων μαζικῆς ἐπικοινωνίας πού ἔχει κάποια γεωγραφικὴ ἀξία. Τὸ δεύτερο, καὶ πιὸ σπουδαῖο εἶναι νὰ μάθει τὴ μέθοδο καὶ τεχνικὴ τῆς ἀναλύσεως καὶ ἀξιολογήσεως μιᾶς εἰδήσεως, ὥστε νὰ τὴν τοποθετεῖ ὀρθὰ μέσα στὸ γεωγραφικὸ τῆς περιβάλλον.

Γιὰ τὴν ἀπόκτηση τῶν πιὸ πάνω ἱκανοτήτων πολὺ βοηθᾶ καὶ ἡ συστηματικὴ παρακολούθηση διαφόρων κατηγοριῶν δημοσιογραφικῶν ἐντύπων, ὅπως μιὰ σοβαρὴ καθημερινὴ ἐφημερίδα (ὄχι μόνον τοπικὴ ἀλλὰ καὶ διεθνούς κύρους ξένη, π.χ. τὸ Βῆμα, ἡ Καθημερινή, Times, Christian Science Monitor, International Herald Tribune κλπ.), Ἐπιστημονικὰ ἢ Ἐπαγγελματικὰ Δελτία (ὅπως Γεωγραφικὰ Χρονικά, Κυπριακαὶ Σπουδαί, Public Opinion, Foreign Affairs, Scientific American, National Geographic κλπ.), Κ υ

βερνητικές Έκδόσεις — Στατιστικές — Έγγραφα (ή Έφημερίδα τής Κυβερνήσεως, οί έκθέσεις τών διαφόρων τμημάτων, ό Προϋπολογισμός, τά Σχέδια Άναπτύξεως, ή Δημογραφική Έκθεση κλπ.) και οί Έκδόσεις τών Ήνωμένων Έθνών (Έπετηρίδες, Στατιστικές, Πρακτικά Συνεδρίων — Δισκέψεων κλπ.).

Ένας άπαιτητικός άναγνώστης πρέπει νά είναι σέ θέση νά κρίνει τήν γεωγραφική ποιότητα και όρθότητα τών ειδήσεων, σχολίων και άρθρων. Δυστυχώς, πολύ λίγοι άρθρογράφοι ή σχολιαστές του ραδιοφώνου και τής τηλεοράσεως έχουν τήν κατάλληλη γεωγραφική κατάρτιση, ώστε νά μπορούν νά βλέπουν, αναλύουν και τοποθετοϋν ένα παγκόσμιο πρόβλημα ή σύγχρονο τοπικό ή διεθνές γεγονός μέσα στο όρθό γεωγραφικό του πλαίσιο. Έτσι οί αναλύσεις, έκτιμήσεις και κρίσεις τους πολλές φορές ύστεροϋν, μέ άποτέλεσμα νά οδηγοϋνται σέ λανθασμένα συμπεράσματα, γιατί οί γεωγραφικοί ή περιβαλλοντικοί παράγοντες — πού ίσως έπαιξαν τó ρόλο τους στή διαμόρφωση του προβλήματος ή γεγονότος — δέν λαμβάνονται σοβαρά ύπ' όψη.

Άποκαλυπτική στήν περίπτωση αύτή είναι μιá έρευνα πού έκαμε τó 1955 ό Dr Donald D. Brand, Διευθυντής του Τμήματος Γεωγραφίας του Πανεπιστημίου του Τέξας.⁶ Σέ σχετική μελέτη πού διάβασε στο έτήσιο συνέδριο του Συνδέσμου Άμερικανών Γεωγράφων στή Μέμφιδα, ό Dr Brand παράθεσε πολλά παραδείγματα «άνήκουστων γεωγραφικών λαθών», πού έκαμαν μερικοί από τούς πιό γνωστούς άρθρογράφους τής έποχής.

Ή έρευνα του Dr Brand άπόδειξε πώς, παρ' όλον ότι πολλά Τμήματα ή Σχολές Δημοσιογραφίας περιλάμβαναν στο πρόγραμμά τους θέματα όπως Οικονομικά, Πολιτικές Έπιστήμες, Ίστορία, Κοινωνιολογία και Ψυχολογία, μόνο στα Πανεπιστήμια τής Γεωργίας και τής Όκλαχόμα περιλαμβανόταν ή Γεωγραφία.

Μιά άλλη έρευνα, πού έκαμε ή Έπιτροπή Τηλεοράσεως του Έθνικού Συμβουλίου τών Δασκάλων Γεωγραφίας Άμερικής, ανάμεσα στους ειδησεογράφους και σχολιογράφους του Ραδιοφώνου και τής Τηλεοράσεως αναφέρει:⁷ «Ή Γεωγραφία ελάχιστα γίνεται αντιληπτή και κατανοητή από τούς διευθυντές προγραμμάτων ή από άλλους του διοικητικού προσωπικού». Πιό κάτω αναφέρει πώς δόθηκαν άρνητικές άπαντήσεις στήν έρώτηση: «Έργοδοτείται γεωγράφος πού έξηγει στους τηλεθεατές τίς άρχές και τούς παράγοντες πού δημιουργοϋν φαινόμενα, όπως οί άνομβρίες, οί καταιγίδες, οί τυφώνες, ή έλλειψη τροφίμων ή καυσίμων, οί πολιτικές περιπλοκές ή συγκρούσεις κλπ.»

Άπό προσωπική πείρα και διαπίστωση μπορώ νά πώ, πώς ή κατάσταση στις Ήνωμένες Πολιτείες, όσον άφορά τά πιό πάνω θέματα, βελτιώθηκε σημαντικά κατά τή δεκαετία του 1970. Ίδιαίτερα μάλιστα έμφαση δίδεται στήν άνάλυση από ειδικούς — και μέ τή βοήθεια σχε-

διαγραμμάτων και χαρτῶν — τῶν καιρικῶν και κλιματολογικῶν συνθηκῶν και φυσικῶν φαινομένων. Τὸ ἴδιο, ὅμως, δὲν μπορεῖ ἀκόμα νὰ λεχθῆ γιὰ τὴν Εὐρώπη, ἐκτὸς ἀπὸ μερικὲς ἐξαιρέσεις. Μὲ εὐχάριστη ἐκπληξη παρατήρησα πρόσφατα στὴν Ἑλλάδα, ὅτι τόσο ἡ ΕΡΤ ὅσο και ἡ YENEΔ στὰ εἰδησεογραφικὰ τους προγράμματα χρησιμοποιοῦν γεωγραφικούς χάρτες και σχεδιαγράμματα ὅταν ἀναφέρονται σὲ διεθνή γεγονότα. Ἡ YENEΔ, μάλιστα, χρησιμοποιεῖ και τίς ὑπηρεσίες εἰδικοῦ μετεωρολόγου ποῦ μὲ τὴ βοήθεια εἰδικῶν χαρτῶν, σχεδιαγραμμάτων και πινάκων ἐπεξηγεῖ τίς καιρικὲς συνθήκες και προβαίνει ἀναλυτικὰ στὶς προβλέψεις γιὰ τὸ ἐπόμενο εἰκοσιτετράωρο.

Ἐξαίρεση ἀποτελεῖ και τὸ τηλεοπτικὸ πρόγραμμα «ΠΑΝΟΡΑΜΑ» τῆς Κυπριακῆς Τηλεοράσεως, ποῦ ἀποτελεῖ σοβαρὴ προσπάθεια στὸν τομέα τῆς σωστῆς δημοσιογραφικῆς ἐνημερώσεως πάνω στὰ τοπικὰ και παγκόσμια γεγονότα. Εἶναι, ἴσως, ἡ μόνη σωστὴ δουλειὰ ποῦ γίνεται στὸν τόπο μας στὸν τομέα τῆς ἀναλυτικῆς δημοσιογραφίας.

Ἀπὸ τὰ πιὸ πάνω, λοιπόν, προκύπτει πὼς ἡ εἰδησεογραφία και σχολιογραφία τῶν ἐφημερίδων και τῶν ἄλλων μέσων μαζικῆς ἐνημερώσεως περυσιάζει γεωγραφικὰ κενά, ποῦ μποροῦν νὰ ἀποφευχθοῦν, ἂν ἀναπτυχθοῦν και καλλιεργηθοῦν οἱ πιὸ κάτω δεξιότητες.

ΓΕΩΓΡΑΦΙΚΕΣ ΓΝΩΣΕΙΣ — ΓΕΩΓΡΑΦΙΚΗ ΠΡΟΟΠΤΙΚΗ — ΓΕΩΓΡΑΦΙΚΗ ΣΚΕΨΗ

1. Καλλιέργεια γεωγραφικῆς προοπτικῆς και σκέψεως

Ἡ γεωγραφικὴ σπουδαιότητα ποῦ ἀποδίδεται σὲ μιὰ ἀνταπόκριση ἢ σ' ἓνα σχόλιο στηρίζεται κυρίως στὴ γεωγραφικὴ σκέψη ποῦ ἐμεῖς οἱ ἴδιοι εἴμαστε ἱκανοὶ νὰ κάμουμε, παρὰ στὸ καθ' αὐτὸ περιεχόμενο τοῦ παρουσιαζόμενου ὑλικοῦ. Γιατὶ ὑπάρχει μεγάλη ποικιλία ποιότητας και παρουσιάσεως τῶν εἰδήσεων και τῶν χαρτῶν ἢ σχεδιαγραμμάτων ποῦ δίδονται καθημερινὰ στὴ γενικὴ κατανάλωση. Ἡ μεγαλύτερη σημασία πρέπει νὰ δίδεται στὴν ἀνάλυση τῶν γεωγραφικῶν περιπλοκῶν και ἀλληλεπιδράσεων, παρὰ στὴν ἀπλὴ γεωγραφικὴ περιγραφή τοποθεσιῶν και γεγονότων. Ἡ ἀπόκτηση, ὅμως, τῆς γεωγραφικῆς σκέψεως και κρίσεως προϋποθέτει παρατηρητικότητα και συστηματικὴ καλλιέργεια και ἄσκηση.

Μιὰ σωστὴ γεωγραφικὴ προοπτικὴ τῶν παγκόσμιων γεγονότων πρέπει νὰ στηρίζεται στὸν κατάλληλο συσχετισμὸ τοῦ χρόνου και τοῦ χώρου, ποῦ τὰ γεγονότα ἀναφέρονται. Τὰ ἱστορικὰ γεγονότα ἔχουν τίς ρίζες τους σὲ περασμένα περιβάλλοντα, ὅπως ἔχουν ἐξελιχθῆ στὸ πέρασμα πολλῶν αἰώνων.

Ὁ σύγχρονος ἀναγνώστης, γιὰ νὰναι σὲ θέση νὰ διακρίνει τὴ γεωγραφικὴ ὑφὴ τῶν εἰδήσεων ἢ γεγονότων, πρέπει νὰ ἔχει στὸ νοῦ

πώς πολλά σύγχρονα γεγονότα δέν συμβαίνουν τυχαία, δέν διαδραματίζονται στο κενό, αλλά ταυτίζονται με μιὰ συγκεκριμένη γεωγραφική περιοχή (γεωγραφικό σκηνικό). "Ωστε, λοιπόν, ή σημασία ενός γεγονότος — παλιού ή σύγχρονου — μπορεί νά εκτιμηθεῖ σωστά ἂν ἰδωθεῖ μέσα στην ὀλική εἰκόνα τῆς περιοχῆς στην ὁποία διαδραματίζεται. Αυτό, βέβαια, προϋποθέτει πώς ὁ ἀναγνώστης ή θεατής εἶναι σέ θέση νά γνωρίζει τίς βασικές ἀρχές τῆς Οἰκολογίας ὅσον ἀφορᾷ τίς σχέσεις ἀνθρώπου — περιβάλλοντος καί νά ἀναλύει καί ὑπολογίζει σωστά αὐτές τίς σχέσεις (ἀλληλοεπιδράσεις καί ἀλληλοεξαρτήσεις).

Αὐτή ή νέα δυναμική γεωγραφική ἀντίληψη εἶναι ἀπό τίς πιό βασικές προσεγγίσεις στην ὀρθή ἀντίκρουση καί ἀνάλυση τῶν παγκόσμιων γεγονότων. Γιατί ὀδηγεῖ τοὺς ἱστορικούς καί σύγχρονους θεσμούς καί γεγονότα στή γῆ, ὅπου τὰ ἀναλύει καί ἐξετάζει προσγειωμένα καί ρεαλιστικά, μακριά ἀπό συναισθηματισμούς, σωβινισμούς καί ἔθνικιστικές ἐκρήξεις. Ἀποδεικνύεται, ἔτσι, πώς ή σπουδαιότητα ενός γεγονότος μπορεί γεωγραφικά νά ποικίλλει, ἀνάλογα με τὸ χρόνο, τὸ χῶρο, τὸ ἱστορικό ή φυσικό περιβάλλον.

2. Ἡ ἀπόκτηση γεωγραφικῆς γνώσεως.

Ἡ γεωγραφική προοπτική τῶν παγκόσμιων γεγονότων, προϋποθέτει πρῶτ' ἀπ' ὅλα τή γνωριμία τοῦ κόσμου, δηλ. τῶν χωρῶν καί τῶν λαῶν πού τόν συνθέτουν. Εἶναι λυπηρὸ νά παρατηρήσουμε πώς τή γνώση αὐτή δέν κατέχουν σήμερα, οὔτε οἱ ἀπόφοιτοι τῶν γυμνασίων μας, οὔτε ἀρκετοὶ φοιτητές ἀνωτάτων ἐκπαιδευτηρίων μας.

"Ανκαί ή ἀπλή γεωγραφική γνώση, ή ή ἀπό μνήμης ἀπαρίθμηση γεωγραφικῶν ὄρων (τοποθεσιῶν, ὀνομασιῶν, λιμνῶν, ποταμῶν κλπ.) δέν ἀποτελεῖ γεωγραφική σκέψη, τὸ γεγονός παραμένει πώς κανένας δέν εἶναι σέ θέση νά σχηματίσει γεωγραφική ἀντίληψη καί νά κρίνει γεωγραφικά τὰ παγκόσμια προβλήματα ή γεγονότα, χωρίς τή βασική αὐτή γεωγραφική γνώση.

Γιὰ παράδειγμα, παρὰ τὸ γεγονός ὅτι ή Γιουγκοσλαβία κατέχει σήμερα μιὰ ἀπό τίς πιό κρίσιμες γεωγραφικές καί πολιτικές θέσεις στίς παγκόσμιες ὑποθέσεις (εἰδικά σ' ὅτι ἀφορᾷ τοὺς γείτονές της καί τίς διπλωματικές της σχέσεις με τή Σοβιετική Ἐνωση καί τίς Ἠνωμένες Πολιτείες), μιὰ ἔρευνα ἀνάμεσα σέ φοιτητές πανεπιστημίων στίς ΗΠΑ ἀπέδειξε πώς μόνο 7 ἀπὸ 4.752 φοιτητές πού ρωτήθηκαν γνώριζαν τίς χῶρες πού γειτόνευαν με τή Γιουγκοσλαβία!⁸

Ἡ ἀπλή γνώση τοῦ πληθυσμοῦ μιᾶς χώρας δέν ἀποτελεῖ, αὐτὴ καθ' ἑαυτή, γεωγραφική ἀντίληψη, ἀλλὰ ἔλλειψή της σημαίνει πώς ἕνα ἄτομο δέν μπορεί νά συμπεράνει ὀρθὰ γιὰ τὰ προβλήματα τῆς χώρας, ὅπως οἱ κοινωνικές καί ὀικονομικές συνέπειες ἀπὸ τήν αὔξηση

του πληθυσμού, ό προγραμματισμός τής ανάπτυξεως, ό έλεγχος τής μεταναστεύσεως, ή διατήρηση του περιβάλλοντος κλπ.

"Όταν γνωρίζουμε τά βασικά παγκόσμια γεωγραφικά φαινόμενα, τότε είμαστε σέ θέση νά δοῦμε πῶς αὐτά σχετίζονται μέ τό ὅλο περιπλοκο σύστημα τῶν φυσικῶν καί ἀνθρώπινων ἀλληλοεξαρτήσεων καί ἀλληλεπιδράσεων.

"Όταν ὑπάρχει ἐκλογή, νά προτιμοῦμε πάντοτε τίς πηγές εἰδήσεων πού διακρίνονται γιά τό γεωγραφικό τους προσανατολισμό. Ἄφοῦ ό χάρτης ἀποτελεῖ τό καλύτερο μέσο γιά προβολή του ρόλου πού ό συσχετισμός του χώρου παιζει στήν ἀπεικόνιση ἑνός σύγχρονου γεγονότος, εἶναι εὐνόητο πῶς ή προσοχή μας πρέπει νά συγκεντρώνεται στήν εἰδησεογραφία καί στά τηλεοπτικά προγράμματα πού παραθέτουν τά γεγονότα πλαισιωμένα μέ χαρτογραφικές ἀπεικονίσεις. Δυστυχῶς, πολλοί ἀπό τούς γνωστούς τηλεπαρουσιαστές δέν κάνουν καλή χρήση χαρτῶν στίς ἀναλύσεις τους, ἀλλά περιορίζονται στό νά ἔχουν μόνο σάν «σκηνικό του βάθους» ἕνα παγκόσμιο χάρτη πού χρησιμεύει μᾶλλον γιά ντεκόρ, παρά γιά χρήση καί ἀναφορά σ' αὐτόν τή στιγμή πού πρέπει.

Ἄκόμα καί ό παρουσιαστής του μετεωρολογικοῦ δελτίου — ὅταν πρόκειται περί «εἰδικου» προσώπου πού ἀναλύει τίς καιρικές συνθήκες — πολλές φορές δέν κάνει σωστά τή δουλειά του. Εἶτε δέ χρησιμοποιεῖ κατάλληλο χάρτη καί περιορίζεται σέ «ἀεροκουβέντες» μέ ἀόριστα καί παραπειστικά σύμβολα, ή ὅταν χρησιμοποιεῖ τόν εἰδικό μετεωρολογικό χάρτη, πού ἐπεξηγεῖ τίς βασικές ἀρχές καί τούς παράγοντες πού καθορίζουν τίς καθημερινές καιρικές συνθήκες, σπαταλᾷ τόν περισσότερο τηλεοπτικό του χρόνο ἀπλῶς γιά νά σημειώνει στό χάρτη μέ κάθε λεπτομέρεια καί ἀκρίβεια τά δεδομένα τής θερμοκρασίας, βροχοπτώσεως, βαρομετρικῆς πιέσεως, κατευθύνσεως τῶν ἀνέμων κλπ.

"Ανκαί πλήρεις μετεωρολογικές ἐπεξηγήσεις γιά τόν χθεσινό καιρό καί γιά τίς προβλέψεις του αὐριανου εἶναι ἀδύνατο νά δοθοῦν μέσα σέ λίγα λεπτά, εἶναι δυνατό — κάθε τόσο — νά δίδονται καί ἀναλύονται μέ λεπτομέρεια καί μέ τή χρήση εἰδικῶν χαρτῶν καί σχεδιαγραμμάτων μερικά φαινόμενα ή ἀρχές πού καθορίζουν καί εἶναι ὑπεύθυνες γιά τίς καιρικές συνθήκες. Κάτι τέτοιο θά ἦταν πολύ πὸ ἐνδιαφέρον ἀπό τήν ἀπλή ἀναφορά στίς θερμοκρασίες ή τίς βροχοπτώσεις στά βουνά καί στίς πεδιάδες μας. Ἄκόμα, ἂν ἦταν δυνατό νά προχωρήσουμε (σέ εἰδικό πρόγραμμα) στή μελέτη καί ἀνάλυση τῶν συνεπειῶν καί ἐπιδράσεων ἑνός ὠρισμένου κλίματος πάνω στή ζωική, φυτική καί ἀνθρώπινη δραστηριότητα μιᾶς καθωρισμένης γεωγραφικῆς περιοχῆς, τότε πράγματι τό πρόγραμμα αὐτό θά ἀποτελοῦσε ἀπό γεω-

γραφικῆς πλευρᾶς μὴ πολὺ ὀρθή προσέγγιση καὶ ὀλοκληρωμένη παρουσίαση.

3. Ἡ καλλιέργεια τῆς ἱκανότητος νὰ διαβάζουμε ἢ βλέπουμε τὶς εἰδήσεις γεωγραφικά.

Πῶς μπορούμε νὰ ἀποκτήσουμε τίς πιὸ πάνω ἱκανότητες καὶ δεξιότητες; Πῶς μπορούμε νὰ ἀποκτήσουμε γεωγραφικὴ κρίση καὶ σκέψη; Ἀσφαλῶς δὲν ὑπάρχει εἰδικὴ συνταγὴ γι' αὐτό. Τὰ πιὸ κάτω, ὅμως, σημεῖα θὰ μᾶς βοηθήσουν ἄρκετὰ στὴν προσπάθειά μας αὐτή:

(α) Γεωγραφικὴ θέση — Τοπικὴ καὶ Περιφερειακὴ

"Ὅταν ἀναλύεις τίς εἰδήσεις δὲν εἶναι ἄρκετὸ νὰ σημειώνεις σ' ἓνα χάρτη τὸ μέρος ὅπου διαδραματίζεται ἓνα γεγονός. Ἀναρωτήσου, γιὰ παράδειγμα, ποῖα εἶναι ἡ γεωγραφικὴ θέση τῆς τοποθεσίας σὲ σχέση πρὸς τὸ Βόρειο καὶ Νότιο Ἡμισφαίριο (ἐποχιακὲς ἐναλλαγές). Ποιὸ εἶναι τὸ γεωγραφικὸ μῆκος καὶ γεωγραφικὸ πλάτος (κλιματικὲς συνθήκες καὶ διάρκεια τῆς μέρας). Ποῖα ἡ θέση σὲ σχέση μὲ τοὺς γύρω ὠκεανούς ἢ ἠπείρους (μεσόγεια, ἠπειρωτικὴ, νησιώτικη κλπ.). Ποιὲς χώρες ἢ θάλασσες πρέπει νὰ διασχίσουμε γιὰ νὰ φτάσουμε ἀπὸ τὴ χώρα μας στὸν τόπο πού διαδραματίζεται τὸ γεγονός. "Ἄν ἐπρόκειτο νὰ ταξιδεύσουμε ἐκεῖ ἀπὸ τὴ Ξηρά, τὴ θάλασσα ἢ τὸν ἀέρα, ποῖα θὰ ἦταν ἡ ἀπόσταση καὶ πόσος χρόνος θὰ χρειαζόταν.

Ἄφου ἓνα γεγονός τοποθετηθεῖ στὸ χάρτη καὶ βγοῦν τὰ ἀνάλογα συμπεράσματα, σύμφωνα μὲ τὴ γεωγραφικὴ του θέση, ἀκολουθεῖ ἡ ἀνάλυση καὶ ἐκτίμησή του σύμφωνα μὲ τὸ φυσικὸ περιβάλλον καὶ τοὺς ἀνθρώπινους πόρους του. Μιὰ τοποθεσία ἀποκτᾶ σημασίαν ὅταν ἐξετάζεται σὲ συνάρτηση μὲ τοὺς γύρω χώρους της. Πολὺ περισσότερο ἓνα γεγονός ἀποκτᾶ μεγαλύτερη σπουδαιότητα, ὅταν ἐξετάζεται σὲ συνάρτηση μὲ τὸ περιβάλλον του.

Οἱ περιβαλλοντικὲς σχέσεις καὶ ἀλληλοεξαρτήσεις πρέπει νὰ ἐρευνηθοῦν, ὄχι μόνον γιὰ νὰ ἀποδειχθεῖ πῶς μιὰ ὁμάδα φυσικῶν παραγόντων προκαθόρισε μιὰν ἀνθρώπινη ἐνέργεια, ἀλλὰ καὶ πῶς οἱ παράγοντες αὐτοὶ συνδυασμένοι μὲ ἀνθρώπινους παράγοντες (ἱστορικούς, πολιτιστικούς, ψυχολογικούς κλπ.) βοηθοῦν στὴν ἐρμηνείαν ἐνὸς φαινομένου (ἢ γεγονότος) ἢ εἰσηγοῦνται τὴ λύση ἐνὸς κοινωνικοῦ προβλήματος.

Πολλοὶ «κτυπητοὶ» τίτλοι τῶν ἐφημερίδων δὲν ἑμφανίζουν τὸν ἀναγνώστη πού σκέφτεται γεωγραφικά. Μεγάλες πλήμμυρες, γιὰ παράδειγμα, πού προκαλοῦν πείνα στὴ Νότια Κίνα ἢ Βόρεια Ἰνδία τὸν Ἰούλιο ἢ τὸν Αὐγουστο, δὲν προκαλοῦν ἐκκληξὴ στὸν μυημένο ἀναγνώστη, γιὰτὶ ἀναμένονται σὰ μέρος ἐνὸς κανονικοῦ ἐποχιακοῦ συστήματος (μουσσωνικοῦ), κατὰ τὴ διάρκεια τοῦ ὁποίου πέφτουν δέκα

φορές περισσότερες βροχές τὸ καλοκαίρι, παρὰ τὸν ἔρηρό χειμῶνα. Ταυτόχρονα φέρνει στὸ νοῦ του ἄλλες περιοχές στὸν παγκόσμιό χάρτη ποὺ χαρακτηρίζονται ἀπὸ τίς ἴδιες κλιματολογικὲς συνθήκες.

Ἄτομα ποὺ γνωρίζουν τὰ παγκόσμια συστήματα, θὰ μπορούσαμε νὰ ποῦμε, πῶς προφητικὰ γνωρίζουν μερικές εἰδήσεις προτοῦ μεταδοθοῦν ἢ προτοῦ συμβοῦν!

(β) *Κατάλογος Ἐλέγχου*

Ἕνας τρόπος ἐλέγχου τῶν διαφορῶν πτυχῶν ποὺ πρέπει νὰ ἐξετάζονται στὴν ἀνάλυση ἐνὸς γεγονότος γεωγραφικοῦ ἐνδιαφέροντος, εἶναι ἡ ἐτοιμασία ἐνὸς καταλόγου ἐρωτήσεων στὶς ὁποῖες πρέπει νὰ δίδουμε ἀπάντηση καὶ ποὺ θὰ καλύπτουν τὰ κύρια σημεῖα ἀναπτύξεως τοῦ θέματος. Τέτοιες ἐρωτήσεις μπορεῖ νὰ εἶναι καὶ οἱ ἀκόλουθες:

1. Ἡ γεωλογία τῆς περιοχῆς δημιουργεῖ ποικίλην γεωμορφολογίαν;
2. Ἡ μορφολογία τῶν ἀκτῶν δημιουργεῖ καλοὺς φυσικοὺς λιμένες;
3. Ὁ ποταμὸς τῆς περιοχῆς εἶναι περισσότερο κατάλληλος γιὰ τὴν ναυσιπλοΐα, ἄρδευση ἢ κινητήρια δύναμη ἀπὸ ὑδροηλεκτρικὴ ἐνέργεια;
4. Εἶναι τὸ κλίμα ἥπιο καὶ ὑγιεινὸ καὶ συμβάλλει στὴν πυκνότητα τοῦ πληθυσμοῦ;
5. Εἶναι ἡ περιοχή κατάλληλη γιὰ βόσκησι, ὑλοτομία, γεωργία ἢ γιὰ ἀναψυχή;
6. Ὑπάρχει στὴν περιοχή πρόβλημα διαβρώσεως, πλημμυρῶν ἢ ξηρασίας;
7. Ὑπάρχουν πολύτιμα ὄρυκτά καὶ πῶς συγκρίνονται σὲ σχέση μὲ τὴν παγκόσμια παραγωγή; Σὲ ποῖο βαθμὸ οἱ μεγάλες δυνάμεις ἐξαρτῶνται ἀπὸ τὴν παραγωγή καὶ ἐξαγωγή τῶν εἰδῶν αὐτῶν;
8. Τὸ προτεινόμενον πολεοδομικὸ, ἀγροτικὸ ἢ περιφερειακὸ σχέδιο ἀναπτύξεως ἀνταποκρίνεται πράγματι στὰ συμφέροντα, ἐνδιαφέροντα καὶ παραδόσεις τῆς Κοινότητος;
9. Πῶς οἱ παραδόσεις, τὰ ἥθη καὶ ἔθιμα μιᾶς περιοχῆς ἐπηρεάζουν τὴν οἰκονομικὴ τῆς ἀνάπτυξη;

Ἀπαντήσεις στὶς πιὸ πάνω ἢ παρόμοιες ἐρωτήσεις βοηθοῦν στὴ μόρφωση μιᾶς καλῆς εἰκόνας τῆς περιοχῆς καὶ τῶν προβλημάτων τῆς. Βοηθοῦν, ἐπίσης, στὴν ἐπισήμανση καὶ ἀνάλυση τῶν γεωγραφικῶν παραγόντων ποὺ συνθέτουν τὸν χαρακτήρα τῆς περιοχῆς ὅπου διαδραματίζεται ἓνα γεγονός.

(γ) *Νὰ βλέπουμε τὴν εἶδηση στὴν παγκόσμια προοπτικὴ τῆς.*

Ἄφου δοῦμε τὴν εἶδηση πρῶτα μέσα στοῦ τοπικό της σκηνικό καὶ περιβάλλον, θὰ τὴ δοῦμε στὴ συνέχεια μέσα στὴν εὐρύτερη γεωγραφικὴ ἢ πολιτικὴ της περιοχὴ καὶ στὴν παγκόσμια προοπτικὴ τῆς. Πρέπει νὰ συνηθίσουμε νὰ βλέπουμε τὸν κόσμον σὰ μιὰ ἐνότητα ὅπου ἕνα γεγονός στὴ μιὰ ἄκρη μπορεῖ νὰ ἐπηρεάσει γεγονότα καὶ ἐξελίξεις στὴν ἄλλη.

Ἡ τεχνολογικὴ πρόοδος στὶς ἐπικοινωνιές καὶ στὶς μεταφορὲς ἔχει συμβάλει πολὺ στὸν ἐκμηδενισμό τῶν ἀποστάσεων καὶ στὴ στενότερη ἐπαφὴ τῶν λαῶν καὶ πληθυσμῶν τῆς γῆς.

Τὴν ἀληθινὴ προοπτικὴ τῶν παγκόσμιων γεγονότων μπορεῖ νὰ μᾶς τὴ δώσει καλύτερα μιὰ καλὴ ὑδρόγειος σφαῖρα παρά ἕνας παγκόσμιος χάρτης. Μὲ βάση τὴ θεωρία τῶν «μεγάλων κύκλων» (συντομότερη ἀπόσταση ἀνάμεσα σὲ δυὸ σημεῖα πάνω στὴν ὑδρόγειο) μποροῦμε εὐκόλα νὰ κάνουμε ἀντιπαραθέσεις καὶ συγκρίσεις καὶ νὰ καταλήγουμε σὲ σωστὰ συμπεράσματα.⁹

(δ) *Νὰ βλέπουμε τὰ γεγονότα στὸν παγκόσμιο χάρτη*

Ἡ ὑδρόγειος σφαῖρα, ἄνκαι ἀναντικατάστατη, ἔχει τίς ἐλλείψεις καὶ τοὺς περιορισμούς της. Γιατὶ δὲν εἶναι πρακτικὰ δυνατό νὰ κατασκευαστοῦν πολὺ μεγάλες σφαῖρες στὶς ὁποῖες νὰ ἀπεικονίζονται ὅλα τὰ φυσικά, ἀνθρώπινα, πολιτικά καὶ πολιτιστικά φαινόμενα καὶ στοιχεῖα ποὺ παρουσιάζονται σήμερα στοὺς γεωγραφικοὺς ἄτλαντες. Ἐτσι καθὲ πολίτης πρέπει νὰ διδαχθεῖ νὰ διαβάζει καὶ μελετᾷ τοὺς χάρτες καὶ τοὺς ἄτλαντες.

Ἡ μελέτη τοῦ χάρτη πρέπει νὰ ἀποτελεῖ ἀναπόσπαστο μέρος τῆς διδασκαλίας τῆς γεωγραφίας σ' ὅλες τίς βαθμίδες τῆς ἐκπαίδευσως. Πρέπει νὰ παραδεχτοῦμε πῶς στὸν τομέα αὐτὸ ὑστεροῦμε καταπληκτικὰ στὴν Κύπρο. Μιὰ μεγάλη μερίδα Κυπρίων δὲν ἔχει οὔτε στοιχειώδη γνῶση τῆς χαρτογραφίας καὶ τῆς μελέτης τοῦ χάρτη, σὲ σημεῖο ποὺ νὰ μὴ βρίσκουν ἀκόμα καὶ τὸν τόπο ποὺ γεννήθηκαν στὸν χάρτη τῆς Κύπρου!

(ε) *Νὰ κάνουμε σωστὲς γεωγραφικὲς συγκρίσεις*

Γιὰ νὰ ἐκτιμήσουμε σωστὰ ἕνα γεγονός πρέπει νὰ τὸ βλέπουμε, ὅπως εἶπαμε, μέσα στὴ γεωγραφικὴ του περιφέρεια. Τέτοιες γεωγραφικὲς περιφέρειες ἢ περιοχὲς εἶναι π.χ. ἡ Μέση Ἀνατολή, ἡ Ἄπω Ἀνατολή, τὰ Βαλκάνια, ἡ Σκανδιναβικὴ Χερσόνησος, ἡ Κεντρικὴ Ἀμερικὴ κλπ. Πρέπει νὰ γνωρίζουμε καὶ νὰ λαμβάνουμε ὑπ' ὄψη τοὺς πολιτικούς καὶ γεωγραφικοὺς συνασπισμούς, τίς ὁμοιότητες καὶ τίς διαφορὲς μεταξύ τους, ὅσον ἀφορᾷ τὰ φυσικά καὶ ἀνθρώπινα γεωγραφικά τους συστήματα.

Συχνά, λανθασμένα συμπεράσματα για διάφορα διεθνή προβλήματα όφειλονται στην έλλειψη κατάλληλης πολιτικής και οικονομικής εκτιμήσεως τῶν γεωγραφικῶν παραγόντων.

Πολλές φορές διαβάζουμε, για παράδειγμα, στὸν Τύπο ἄρθρα πού ἀναφέρονται στὴν Ἰαπωνία σὰν τὴ «Βρετανία τῆς Ἀνατολῆς». Αὐτή, ὅμως, εἶναι μιὰ πρόχειρη καὶ λανθασμένη γενίκευση. Ποιὲς εἶναι οἱ ὁμοιότητες ἀνάμεσα στὶς δύο χῶρες;

Μιὰ ὁμοιότητα εἶναι ὅτι καὶ οἱ δύο χῶρες εἶναι νησιώτικες καὶ βρίσκονται κοντὰ σὲ μεγάλα ἠπειρωτικά συμπλέγματα. Μιὰ ἄλλη ὅτι καὶ οἱ δύο ἔχουν ἀναπτυγμένη βαρεῖά βιομηχανία καὶ μεγάλο ἐξαγωγικὸ ἐμπόριο. Ἄλλὰ ἄς δοῦμε καὶ τίς διαφορὲς τους πού ὀφείλονται σὲ γεωγραφικούς παράγοντες.

Ἡ Ἰαπωνία βρίσκεται ἀπέναντι ἀπὸ ἀνατολικὲς ἀκτὲς σὲ γεωγραφικὸ πλάτος 30°—45°, ἐνῶ ἡ Βρετανία ἀπέναντι ἀπὸ δυτικὲς ἀκτὲς σὲ γεωγραφικὸ πλάτος 50°—60°, ἄρα ἔχουν ἐντελῶς διαφορετικὸ τύπο κλίματος. Ἡ Ἰαπωνία εἶναι πολὺ ὀρεινὴ καὶ διαμελισμένη καὶ δὲν προσφέρεται γιὰ ἐκτεταμένες καλλιέργειες, γι' αὐτὸ παραδοσιακὰ στηρίχτηκε γεωργικὰ στὴν καλλιέργεια τοῦ ρυζιοῦ καὶ μεταξιοῦ. Ἡ Βρετανία ἀντίθετα διαθέτει μεγάλες ἐκτάσεις γιὰ βοσκότοπους καὶ γιὰ ξηρικές καλλιέργειες. Ἡ Ἰαπωνία ἔχει παράδοση καὶ πολιτισμὸ καθαρὰ ἀνατολίτικο (παρὰ τίς πρόσφατες δυτικὲς ἐπιρροές), ἐνῶ ἡ Βρετανία χαρακτηρίζεται ἀπόλυτα ἀπὸ τὸν δυτικοευρωπαϊκὸ πολιτισμὸ.

Ἐπὶ τοῦ ἐπιπέδου τῆς γεωγραφίας, ὑπάρχουν, λοιπόν, σοβαρὲς διαφορὲς καὶ ἀντιθέσεις μεταξὺ τῶν δύο χωρῶν.

ΕΠΙΛΟΓΟΣ

Ἐὰν ὅσα ἔχουμε ἀναφέρει, φαίνεται πὼς ἡ γεωγραφικὴ προσέγγιση στὰ διάφορα γεγονότα πού διαδραματίζονται καθημερινὰ στὸν πλανήτη μας βοηθᾷ οὐσιαστικὰ στὴν σωστὴ καὶ πλήρη ἀνάλυση, περιγραφή καὶ κατανόησή τους.

Ὅχι μόνο οἱ δημοσιογράφοι, οἱ σχολιαστὲς καὶ οἱ συντάκτες τῶν μέσων μαζικῆς ἐπικοινωνίας, ἀλλὰ καὶ κάθε πολίτης πρέπει νὰ ἔχει τὴ βασικὴ γεωγραφικὴ κατάρτιση πού θὰ τοῦ ἐπιτρέψει νὰ κρίνει τὰ γεγονότα καὶ τίς εἰδήσεις καὶ νὰ τίς ἀξιολογεῖ σύμφωνα μὲ τὴ γεωγραφικὴ τους προοπτικὴ. Ἡ δημιουργία γεωγραφικῆς σκέψεως πρέπει νὰ ἀποτελεῖ βασικὴ ἐπιδίωξη τῆς ἐκπαιδεύσεως μας ἂν θέλουμε νὰ μορφώσουμε πολίτες ἐλεύθερους καὶ δημοκρατικούς, πού νὰ προβληματίζονται σωστὰ πάνω στὰ παγκόσμια ἢ τοπικὰ προβλήματα καὶ γεγονότα.

1. See for instance A. Malin's "Industrial Growth and World Trade", Cambridge University Press, 1963, p. 41.

ΣΗΜΕΙΩΣΕΙΣ

1. 'Αποτελεί γενική διαπίστωση πώς η Γεωγραφία δέ διδάσκεται ικανοποιητικά στα σχολεία μας, ούτε γίνεται κτήμα των άποφοίτων μας.
2. ΑΝΔΡΕΑ ΚΛ. ΣΟΦΟΚΛΕΟΥΣ, «Περιφέρειες και Περιφερειακή Διοίκηση», Λευκωσία, Φεβρουάριος 1975.
3. Τελευταία έχει αναπτυχθεί με ιδιαίτερη έπιτυχία ο κλάδος τής 'Ιατρικής Γεωγραφίας (Medical Geography).
4. ROBERT E. DICKINSON, "City and Region: A Geographical Interpretation", Routledge and Kegan Paul, London 1964.
5. WILLARD E. MILLER, "Global Geography", Thomas Y. Crowell Co., New York 1957.
6. DONALD D. BRAND, "Geography and Journalism", Programme of the Annual Meeting of the Association of American Geographers, 19 (April 11—14, 1955).
7. Television Committee for the National Council of Geography Teachers, "Television Geography: Report No. II", The Journal of Geography, 53 (December, 1954).
8. BENJAMIN FINE, "U.S. College Students 'Flank' in knowledge of Geography", New York Times, June 11, 1951.
9. JEWELL PHELPS, "Geography behind the News: An Experiment in Educational Television", The Journal of Geography, 54 (1955).

'NORMAL' PATTERNS OF INDUSTRIAL GROWTH IN CYPRUS

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INTRODUCTION

The different ways in which the pattern of industry develops in different countries depend on many factors, but some general rules can be distinguished. First, there are certain general patterns in the increase of demand as income grows, and the growth of industry will show some response to these. Second, the pattern of industrial growth will depend partly on a country's endowment in natural and human resources, though the rate and order in which these are developed are influenced by changes in transport costs, population, and outside factors such as foreign capital.

Changes in demand patterns are affected not only by growth as such but also by changes in relative prices, tastes, government trade policy and other economic factors, and these factors could differ considerably from one country to another. Nevertheless, when changes in the pattern of demand are compared in countries at similar stages of economic development, some general patterns can be discerned. With a rise in real income, the broad picture in the changes in the pattern of demand for manufactures is a relatively rapid rise in demand for capital goods, chemicals and durable consumer goods, and a relatively slow expansion in the demand for food, beverages, tobacco, textiles and clothing¹. Changes in demand patterns are not, however, the only influence on changes in the pattern of output. As an economy grows, its ability to produce different goods changes and this is reflected in changes in relative costs of production in different lines. Such changes in costs in turn depend on the resource endowment (climate, location, mineral wealth, quantity and quality of human resources) of the economy, and on the extent to which economies of scale accrue as production is expanded.

The pattern of industrial growth in a country may also be substantially influenced by government intervention, either directly in the form

1. See for instance A. Maizels "Industrial Growth and World Trade", Cambridge University Press, 1963, p. 41.

of an economic plan, or indirectly through discriminatory import restrictions, import substitution in general, or other measures. Thus the industrial growth pattern of a country depends on a complex interplay of influences reflecting inter alia not only the indigenous availability of resources, but also the relative costs of transporting the resources, exports, and population changes. There are, however, influences which tend to make the industry-pattern of growth broadly similar in countries at similar stages of industrialization. The first such influence is that the pattern of demand tends to change in a similar way in countries at broadly the same level of industrialization. Second, in the early stages of industrialization, the levels of industrial skills and managerial ability restrict the kind of industrial activities that can profitably be undertaken. This generally means that the simpler forms of industries (such as consumer goods) tend to be developed before the more complex industries (such as capital goods). Third, the size of the market, measured in terms of national income, tends to be too small in the earlier stages of industrialization to justify the establishment of optimum-sized plants in a number of industries (such as chemicals and capital goods). These limitations tend to be relaxed as industrialization develops, because industrial skills develop and the wider market allows new industries to be profitably established. Thus, while different countries must be expected to differ considerably in the ways in which their various industries grow because of specific national features, there are good reasons to expect some broad pattern of growth to be discerned among countries at the same stage of industrialization.

THE 'NORMAL' PATTERN MODEL OF INDUSTRIAL GROWTH

To derive such a pattern two fairly extensive studies were undertaken. The first is Chenery's "**Patterns of Industrial Growth**"¹ and the second is the United Nations "**A Study of Industrial Growth**".²

These studies make an attempt to derive a standard relationship between the level and pattern of manufacturing output on the one hand, and some general economic characteristics of the country on the other hand. The explanatory variables, selected on the basis of preliminary tests, are income per capita and population. These proved to form the best combination — in the sense of the minimum number necessary for an adequate explanation of manufacturing output (the dependent variable) — from among eight candidate variables. These

1. H. Chenery, "**Patterns of Industrial Growth**" *American Economic Review*, Volume II, No. 4, September, 1960, pp. 604—655.

2. U.N., "**A Study of Industrial Growth**", New York, 1963.

variables are (i) income per capita, (ii) population, (iii) rate of economic development, (iv) government policy, (v) natural resources, (vi) trading position, (vii) technological factors and (viii) other factors, such as the availability of entrepreneurial skills.

The final model then used to explain the level of manufacturing output was: $V_o = f(y, P)$

where V_o = value added of the total manufacturing sector
 y = income per capita
 P = population

and the final regression equations utilized were:

$$\log V_o = a_o + b_o \log y + c_o \log P$$

for total manufacturing output;

and $\log V_i = a_i + b_i \log y + c_i \log P + d_i \log D$
 for the output of the individual sub-sectors for
 $i=1 \dots\dots 13$.

where V = value added

y = income per capita

P = population

D = relative degree of industrialization defined to be
 the ratio between the observed value added for
 total manufacturing (V_o) and the calculated or

'normal' valued added (V_o') i.e. $D = \frac{V_o}{V_o'}$ or

$$\log D = \log V_o' - \log V_o$$

and a_i is a constant; b_i , c_i and d_i are the partial elasticity coefficients of the respective explanatory variables.

This model was applied on a cross-sectional basis for 1953 for 53 countries and for 1958 for 42 countries, for 13 sub-sectors of the manufacturing sector. The results of 1953 and 1958 combined sample are summarized in Table I.

1. The basic feature of the regression equation is that a set of "aggregate" variables has been chosen to explain the behaviour of less aggregate variables, and also that for the purpose of general analysis, the same form of equation is applied to both total manufacturing and its 13 constituent sub-sectors. It has been found, however, that there are some significant correlations among the different sectors within each country i.e. a deviation of observed from 'normal' manufacturing output on the basis of the preliminary equations was reflected in the output levels of the sectors which showed residuals of the same sign, though to varying degrees. For this reason, the additional explanatory variable, D , 'the relative degree of industrialization', was introduced. The introduction of D as a third independent variable left unchanged the values of the regression coefficients of the other two variables (income per capita and population) as well as the constant terms. Thus D can be considered as a correction term that serves to distribute the over-all residual of total manufacturing output over the 13 constituent sub-sectors.

TABLE 1
THE STANDARD REGRESSION EQUATIONS

Industry Code (1S1C)	Manufacturing Sub-sectors	Regression Equations
20, 21 & 22	Food, beverages & tobacco	$\log V_1 = -1.032 + 0.978 \log y + 0.862 \log P + 0.884 \log D$
23	Textiles	$\log V_2 = -2.549 + 1.205 \log y + 1.329 \log P + 0.964 \log D$
24	Clothing & footwear	$\log V_3 = -2.709 + 1.361 \log y + 0.962 \log P + 0.877 \log D$
25&26	Wood products	$\log V_4 = -3.288 + 1.531 \log y + 1.030 \log P + 1.008 \log D$
27	Paper & paper products	$\log V_5 = -5.008 + 2.035 \log y + 1.116 \log P + 1.699 \log D$
28	Printing & publishing	$\log V_6 = -3.926 + 1.718 \log y + 1.041 \log P + 0.873 \log D$
29	Leather products	$\log V_7 = -2.160 + 0.893 \log y + 0.857 \log P + 1.251 \log D$
30	Rubber products	$\log V_8 = -4.176 + 1.582 \log y + 1.201 \log P + 0.281 \log D$
31&32	Chemicals & petroleum products	$\log V_9 = -3.476 + 1.547 \log y + 1.395 \log P + 0.712 \log D$
33	Non-metallic mineral products	$\log V_{10} = -2.258 + 1.157 \log y + 1.041 \log P + 1.116 \log D$
34	Basic metals	$\log V_{11} = -5.269 + 1.991 \log y + 1.649 \log P + 1.915 \log D$
35, 36		
37&38	Metal products	$\log V_{12} = -4.175 + 1.984 \log y + 1.312 \log P + 1.566 \log D$
39	Other manufactures	$\log V_{13} = -4.872 + 1.847 \log y + 1.333 \log P + 1.053 \log D$
Total Manufacturing		$\log V_0 = -1.637 + 1.369 \log y + 1.124 \log P$

THE USEFULNESS OF THE 'NORMAL' PATTERN MODEL

The average pattern of growth in industrial output described by the model does not have a normative value, neither is it necessarily identical with the optimal pattern of development. The model provides a reference pattern only, enabling one to identify developments within the economy and within the manufacturing sector in particular, which are peculiar compared with what is observed on the average. Secondly, the degree of industrialization provides a useful measure of the status of a particular country's industrial development, compared to other countries with similar income per capita and population.

Development policies are usually guided as much by analogy to other countries as by an explicit analysis of the factors peculiar to a given situation. The model enables a comparison to be made of present level of industrial output and 'normal' level, given income per capita and population. Deviations from 'normal' which would indicate a relative over-or under-industrialization would call for a detailed study of the factors which have contributed to these deviations. With these initial deviations in mind, a projection of industrial growth along normal patterns could be made under alternative assumptions as regards growth in income per capita, population and policies to influence the relative degree of industrialization.

THE MODEL APPLIED TO CYPRUS

The application of the model requires estimates of income per capita, population, and size of the manufacturing sector in total. Moreover, the standard equations of the model are in United States of America dollars of 1953 and the value added figures resulting from the model are consequently in those prices. In this study the conversion of Cyprus currency into dollars has been done on the basis of the official exchange rate prevailing in 1953 i.e. U.S. \$ 2.80 to one Cyprus Pound, C(£).

National income per capita for 1971 at 1953 prices was calculated by utilizing a price deflator computed from national income estimates at current and at constant prices. To express value added in manufacturing at 1953 prices the corresponding implicit price deflator from national income estimates was used.

For 1971 the necessary data for the calculation of the 'normal' patterns are:¹

1. The data used were obtained from the Department of Statistics and Research "Gross Domestic Product, Gross National Product and National Income for the years 1950—1957 & 1958—1971 — Methodology for Backward Revisions for the years 1950—1957", Nicosia, 1973 & "Industrial Production Survey, 1971". Since the completion of the empirical research for this study certain revisions in the national accounts and industrial statistics were effected but these are of relative small importance and would not appreciably affect the results of this investigation.

National income at 1971 prices	= C£230.5 million
Population in June 1971	= 0.639 million
Income per capita at 1953 prices	= C£264
Increase of price index for national income from 1953 to 1971	= 36.5%
Increase of price index for manufacturing from 1953 to 1971	= 26.9%
Value added by manufacturing at 1971 prices	= C£30.2 million
Value added by manufacturing at factor cost at 1971 prices	= C£28.0 million

Given these values, the 'normal' value added at factor cost in the total manufacturing sector according to the Model is estimated at C£53.4 million for 1971. But actual value added at factor cost for 1971 is only C£28.0 million resulting in a degree of industrialization of 0.5243.

Using the standard regression equations of Table I, the 'normal' composition of the manufacturing sector for 1971 was calculated to be as in Table II. For comparison purposes the actual composition is also given.

TABLE II
ACTUAL AND 'NORMAL' COMPOSITION OF VALUE ADDED
IN THE MANUFACTURING SECTOR FOR 1971

Industry Code	Manufacturing Sub-sectors	Value Added in C£ million		% Composition of Value Added		% Deviation of Observed from 'Normal' Composition
		Observed	'Normal'	Observed	'Normal'	
(ISIC)						
20, 21&22	Food, beverages & tobacco	10.3	11.6	34.1	38.4	-4.3
23	Textiles	1.1	1.2	3.7	4.0	-0.4
24	Clothing & footwear	4.6	4.5	15.2	14.9	+0.3
25&26	Wood products	2.3	2.1	7.6	6.9	+0.7
27	Paper & paper products	0.4	0.7	1.3	2.3	-1.0
28	Printing & publishing	1.4	1.8	4.6	6.0	-1.4
29	Leather & leather products	0.3	0.4	1.0	1.3	-0.3
30	Rubber products	0.3	0.6	1.0	2.0	-1.0
31&32	Chemicals & petroleum products	1.0	1.6	3.3	5.3	-2.0
33	Non-metallic mineral products	2.9	1.8	9.6	6.0	+3.6
34	Basic metals & metal products	4.7	3.5	15.6	11.6	+4.0
35, 36,						
37&38						
39	Other manufactures	0.9	0.4	3.0	1.3	+1.7
	TOTAL MANUFACTURING	30.2	30.2	100.0	100.0	120.61

(Source: Observed value added for 1971 is taken from the Department of Statistics & Research "Industrial Production Survey, 1971", pp. 15-16 & 37-38 and data on cottage activities).

The results show surprisingly small deviations of the observed from the 'normal' composition for all sub-sectors. The exceptions are food, beverages and tobacco, non-metallic mineral products and metal products. For food, beverages and tobacco, the negative deviations could be explained firstly by the exclusion of indirect taxes from value added (as the 'normal' equations were calculated mostly from value added at market prices including indirect taxes¹), and secondly from the possible non-linearity of the observed relationships - meaning that the descriptive validity of the 'normal' relationships would be increased if a proper allowance for such non-linearity could be made. Such an allowance could be made by considering variable the partial elasticities of the corresponding explanatory variables at certain levels. As the United Nations study pointed out "there seems to be a rather distinctive non-linearity in the relationships for food, beverages and tobacco, and non-metallic mineral products for under-developed countries".² Finally it may be noted from the 'normal' equations that the constant term for food, beverages and tobacco is higher than the constant term for total manufacturing. This indicates that the lower range of applicability of the 'normal' equations does not extend into the very low levels of income per capita and population, especially for this sub-sector.

The positive deviation for non-metallic mineral products is due to the abundance of indigenous raw materials, (such as gypsum and marl for cement and bricks), the increased demand for these products because of the expansion of the construction activity in the country, and possibly to the non-linear relationship between income, population and output in this sub-sector.

For metal products the relatively high positive deviation may be explained by the fact that 37% of value added in this sector in Cyprus is accounted for by repairs of motor vehicles.

CONCLUSION

Following Professor Chenery's and the United Nations cross-sectional studies of industrial growth, manufacturing for a country of the size and income level of Cyprus should contribute double its present contribution of about 12% to the gross national product. Its relative importance would rise slowly with population increases and much more rapidly with any increase in average incomes. No country can be expected to conform to a 'normal' pattern, but the data nevertheless suggest that

1. U.N., "A Study of Industrial Growth", op. cit. p. 53.

2. *Ibid* p. 20.

manufacturing in Cyprus is still relatively under-developed.

The policy maker may be tempted to recommend a substantial increase in manufacturing to bridge the gap between actual and 'normal'. However, Cyprus as a small economy, can, with reason, be viewed to differ from the trend.

According to Chenery,¹ there are three causes of non-proportional growth in domestic manufacturing output (as measured by the increase in the percentage share in total output with rising income per capita). These are: (a) import substitution, (b) growth in final demand, and (c) growth in intermediate demand, derived from growth of final demand. Import substitution is found to account for more than 50% of industrialization brought about by rising income. But while changes in the composition of final demand prompt the non-proportional growth of sectoral outputs, it is the comparative cost structure in the developing country as compared with cost structures abroad that determines the source of supply, and the fundamental relationship underlying import substitution and the growth of intermediate demand is the comparative cost structure. So far a major part of the changing composition in demand has been satisfied with more imports of manufactures, with domestic manufacturing playing only a relatively small role.

Cyprus before 1960 as a British colony was in customs union with the United Kingdom. As such the Island was selling primary products in exchange for industrial imports. Thus import substitution did not develop to its 'normal' level. But the most fundamental factors for the low share of manufacturing in a small economy as that of Cyprus are the unusually small size of the market and the heavy dependence of its manufacturing sector on foreign raw materials. Rising incomes will enlarge effective demand, but the small size of the population — about 639,000 at present, constitutes a permanent constraint to the increased share of manufacturing.

The dependence of developing countries on imported industrial raw materials is typical but what is important in the case of Cyprus is that no significant alteration of this dependence is in sight. In a small country economy like that of Cyprus with its limited number of large-sized industrial units, intermediate goods production should be expected to be limited to a greater extent since the domestic market for such producer goods will be even more limited in size.

1. H. Chenery, *op. cit.* pp. 639—644.

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ΠΕΤΡΟΛΟΓΙΚΗ ΤΑΞΙΝΟΜΗΣΙΣ
ΒΑΣΕΙ ΤΗΣ ΧΗΜΙΚΗΣ ΣΥΣΤΑΣΕΩΣ ΤΩΝ ΕΚΡΗΓΙΓΕΝΩΝ ΠΕΤΡΩΜΑΤΩΝ
ΔΙΑ ΕΜΠΕΙΡΙΚΩΝ ΜΕΘΟΔΩΝ ΗΛΕΚΤΡΟΝΙΚΟΥ ΔΙΕΡΕΥΝΗΤΟΥ

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Π Ε Ρ Ι Δ Η Ψ Ι Σ

Ταξινόμησις 111 ὀφιολιθικῶν πετρωμάτων τοῦ Τροόδου ἀντιπροσωπευόντων δείγματα περιδοτιτῶν, μελαγάδδρων, γάδδρων, διαθασῶν ὑπὸ μορφῆν φλεβῶν ἐντὸς τῶν γάδδρων, μελαδιαθασῶν, διαθασῶν, χαλαζιακῶν διαθασῶν καὶ ὀξίνων πετρωμάτων δι' ἐμπειρικῆς μεθόδου διαχωρισμοῦ βασισομένης ἐπὶ τῆς θεωρίας τῶν πιθανοτήτων καὶ χρησιμοποιοῦσας τὸν κανόνα ἐκλογῆς τοῦ Bayes ἔδωκε 100% ἐπιτυχίαν εἰς τὸν διαχωρισμὸν τῶν περιδοτιτῶν, τῶν ὀλιθινικῶν μελαδιαθασῶν, τῶν χαλαζιακῶν διαθασῶν καὶ τῶν γρανοδοριτῶν.

Παραλλήλως, διὰ τῆς ἐφαρμογῆς τῆς ἀλγορίθμου μὴ γραμμικῆς μεθόδου ἀπεικονίσεως (non linear mapping algorithm) ἐπετεύχθη πλήρης διαχωρισμὸς μεταξὺ τῶν περιδοτιτῶν, μελαγάδδρων καὶ γάδδρων ὡς καὶ περαιτέρω διαχωρισμὸς τῶν ὀξίνων πετρωμάτων εἰς δύο ὑποομάδας (τῶν μικραγρανοδοριτῶν καὶ γρανοφυρῶν ἀφ' ἑνὸς καὶ τῶν γρανοδοριτικῶν πορφυρῶν ἀφ' ἑτέρου).

ΕΙΣΑΓΩΓΗ

Ἡ παρούσα ἐργασία ἀποτελεῖ προκαταρκτικὴν ἔρευναν εἰς τὴν ἐφαρμογὴν στατιστικῶν θεωριῶν ἐκλογῆς διὰ τὴν αὐτόματον ταξινόμησιν ἐκρηξιγενῶν πετρωμάτων διὰ τῆς χρησιμοποίησεως τῆς χημικῆς ἀναλύσεως τῶν πετρωμάτων. Πρὸς τὸν ἀνωτέρω σκοπὸν ἐχρησιμοποιήθησαν 111 χημικαὶ ἀναλύσεις τῶν ὀφιολιθικῶν πετρωμάτων τοῦ Τροόδου.

Διὰ τὴν ταξινόμησιν τῶν ὀφιολιθικῶν πετρωμάτων ἐλήφθη ὑπ' ὄψιν ἡ περιεκτικότης τῶν πετρωμάτων εἰς 12 κύρια ὀξειδία, ἧτοι τῶν SiO_2 , Al_2O_3 , Fe_2O_3 , FeO , MnO , MgO , CaO , Na_2O , K_2O , TiO_2 , P_2O_5 καὶ CO_2 , ἐφηρμόσθησαν δὲ δύο μέθοδοι ἐρεύνης.

Ἡ πρώτη μέθοδος εἶναι γνωστὴ ὡς μέθοδος τοῦ Bayes, ἡ δὲ δευτέρα ὡς ἀλγόριθμος μεθόδου μὴ γραμμικῆς ἀπεικονίσεως (non linear mapping algorithm).

Ἡ ἐφαρμογὴ τῶν προγραμμάτων τούτων τοῦ ἠλεκτρονικοῦ διερευνητοῦ ἐγένετο κατὰ τὴν διάρκειαν μεταδιδακτορικῶν ἐρευνῶν τοῦ γράφοντος κατὰ τὰ ἔτη 1972—1973 εἰς τὸ Imperial College of Science and Technology τοῦ Πανεπιστημίου τοῦ Λονδίνου ὑπὸ τὴν ἐποπτείαν τοῦ Καθηγητοῦ κ. John Webb καὶ τοῦ Δρος R. J. Howarth.

* Ἀνακοίνωσις εἰς Α' Παγκόσμιον Συνέδριον Ἑλλήνων Ἐπιστημόνων 24—30 Ἀγούστου, 1973.

ΠΡΟΓΡΑΜΜΑ BAYES

Ἡ τεχνική ἢ ὁποία χρησιμοποιεῖται εἰς τὴν παροῦσαν περίπτωσιν τοῦ προγράμματος Bayes εἶναι ἡ ἐκθετική μορφή τῆς πολυωνύμου διακριτικῆς μεθόδου τοῦ Specht (1967α). Αὕτη στηρίζεται εἰς τὸν μὴ παραμετρικὸν ὑπολογισμὸν μιᾶς συναρτήσεως συχνότητος πιθανοτήτων δι' ἐκάστην κατηγορίαν ἢ ὁποία θὰ ταξινομηθῆ οὕτως ὥστε ὁ κανὼν ἐκλογῆς τοῦ Bayes νὰ δύναται νὰ ἐφαρμοσθῆ. Ἡ τεχνική αὕτη δύναται νὰ ἐπεξηγηθῆ (Howarth, 1971) διὰ τοῦ κάτωθι παραδείγματος.

Ὑποθετίσω ὅτι δι' ἐκάστην ὁμάδα Ω_j , ὅπου $j=1,2,\dots,k$, ἔχομεν παρατηρήσεις ἐπὶ ἑνὸς διανύσματος $X=x_1, x_2, \dots, x_p$ p -ἀριθμοῦ χαρακτηριστικῶν καὶ διαί ἐκ τῶν προτέρων (a priori) πιθανότητες h_j , ὅπου $j=1,2,\dots,k$, κατὰ τὰς ὁποίας ἀπαντᾷ ἐκάστη ὁμάς εἶναι γνωστή. Ὑποθετίσω ἐπίσης ὅτι ἡ πολυμεταβλητὴ συνάρτησις πυκνότητος πιθανοτήτων διὰ τὴν j -οστήν κατηγορίαν εἶναι $f(X)$, ἤτοι, ἡ πιθανότης ὅτι ὁ X ἀνήκει εἰς τὴν κατηγορίαν j . Αἱ συναρτήσεις αὗται δυνατόν νὰ εἶναι οἰασδῆποτε μορφῆς νοουμένου ὅτι εἶναι πανταχοῦ μὴ ἀρνητικά, δλοκληρώσιμοι καὶ ὅτι τὰ δλοκληρώματα εἰς δλόκληρον τὸν χῶρον ἰσοῦνται πρὸς τὴν μονάδα. Ὁ ταξινομητῆς δέον νὰ ἐκτελέσῃ τὴν ταξινόμησιν ἐπὶ τῇ θάσει αὐτῶν τῶν δεδομένων μετὰ τοῦ ἐλαχίστου δυνατοῦ λάθους εἰς τὴν ἀναγνώρισιν.

Καθορίζοντες μίαν συνάρτησιν ἐκλογῆς $d(X)$, ὅπου $d(X)=d_i$ σημαίνει ὅτι ὁ X ἐκχωρεῖται εἰς τὸ Ω_i , ἔστω l_i ἡ ἀπώλεια ἢ ὁποία προκύπτει ἐὰν $d(X)=d_i$ ὅταν ὁ X εἶναι μέλος τοῦ Ω_j . Ὑποτίθεται ὅτι ἡ ἀπώλεια εἶναι μηδὲν διὰ μίαν ὀρθὴν ἀπόφασιν. Τὸ πρόβλημα τὸ ὁποῖον παραμένει εἶναι νὰ ἐπιλεγῆ ἓν κριτήριον ἐκλογῆς τοιοῦτον ὥστε νὰ ἐλαχιστοποιηθῆ ὁ μέσος ὀρος ἀπωλείας γενικῶς δι' ὅλας τὰς ὁμάδας. Ὁ Fu (1968) ἔχει ἀποδείξει ὅτι συμφῶνως τοῦ κανόνος ἰδανικῆς (optimal) ἐκλογῆς, ὑπὸ τὴν ἔννοιαν τῆς ἐλαχιστοποίησης τοῦ μέσου ὀρου ἀπωλείας, ἡ συνάρτησις $\sum_i l_i h_i f_i(X)$ εἶναι μικροτέρα παρὰ ὑπὸ οἰανδῆποτε ἄλλον κανόνα ἐκλογῆς. Διὰ τῆς χρησιμοποίησης μιᾶς συμμετρικῆς συναρτήσεως ἀπωλείας

$$d(X)=d_i, l_i=0$$

$$d(X)=d_j, j \text{ διάφορον τοῦ } i, l_i = \text{σταθερὰ}$$

ὅταν ὁ X εἶναι μέλος τοῦ Ω_j , τότε ὁ κανὼν ἐκλογῆς τοῦ Bayes συνίσταται εἰς τὴν ἐκχώρησιν τοῦ X εἰς τὴν κατηγορίαν διὰ τὴν ὁποίαν $h_j l_j f_j(X)$ εἶναι ἐλαχίστη.

Ἐνῶ θὰ ἦτο δυνατόν νὰ ὑπολογισθοῦν αἱ ἐκ τῶν προτέρων (a priori) πιθανότητες καὶ αἱ τιμαὶ τῆς συναρτήσεως ἀπωλείας ὅσον ἀφορᾷ τὴν ὀρθὴν ταξινόμησιν τοῦ μεγέθους δι' ἐκάστην κατηγορίαν, πιθανὸν νὰ εἶναι ἀδύνατον νὰ γνωρίσωμεν τὰς συναρτήσεις τῆς πυκνότητος τῶν πιθανοτήτων. Αἱ πυκνότητες πιθανοτήτων δι' ἐκάστην κατηγορίαν ὑπολογίζονται ὡς ἓν ἄθροισμα ἐκθετικῶν συναρτήσεων ἐπὶ τῇ θάσει τοῦ συνόλου τῶν καθοδηγητικῶν δειγμάτων (set of training samples), τὰ ὁποῖα (ἅπαντα) ἔχουν μίαν θετικὴν πιθανότητα νὰ συμδοῦν καὶ θὰ ὑποτεθῆ ὅτι τὰ δείγματα τὰ ὁποῖα εἶναι ἐκτὸς τοῦ καθοδηγητικοῦ συνόλου, ἀλλὰ πλησίον ἑνὸς δοθέντος ση-

μείου δείγματος (εις p -διάστατον χώρο), θά έχουν περίπου την αὐτὴν πιθανότητα νὰ συμβοῦν ὡς τὰ καθοδηγητικὰ δείγματα.

Ἐὰν ὑποθεθῆ ὅτι ἡ ὑπολογισθεῖσα συνάρτησις πυκνότητος πιθανοτήτων διὰ μίαν κατηγορίαν εἶναι ὁμαλὴ καὶ συνεχῆς καὶ ὅτι αἱ πρῶται μερικαὶ παράγωγοι εἶναι μικραὶ, ὁ Specht (1967b) προέτεινεν ὅπως ἀνευρεθῆ μία παρεμβαλλομένη (interpolation) συνάρτησις $g(X, X_i)$ τοιαύτη ὥστε

$$f(X) = \frac{1}{m} \sum_i g(X, X_i) \quad (1)$$

ὅπου εἶναι ὁ ἀριθμὸς τῶν διαθέσιμων καθοδηγητικῶν προτύπων (training patterns) καὶ $g(X, X_i)$ εἶναι ἡ συνεισφορά τοῦ i -οστοῦ καθοδηγητικοῦ προτύπου εἰς τὴν ὑπολογιζομένην πυκνότητα. Ἐὰν ὑποθεθῆ ὅτι κάθε καθοδηγητικὸν πρότυπον συνεισφέρει, ἀνεξαρτήτως, εἰς τὴν γενικὴν πυκνότητα κατανομῆς καὶ ὅτι $g(X, X_i)$ εἶναι μία συνάρτησις τῆς Εὐκλείδειου ἀποστάσεως τοῦ X ἀπὸ τὸ i -οστὸν σημεῖον τοῦ καθοδηγητικοῦ προτύπου εἰς p -διάστατον χώρον κατὰ τὸν Specht (1967b) καὶ τὸν Howarth (1971) ἔχομεν τὴν ἀκόλουθον σχέσιν:

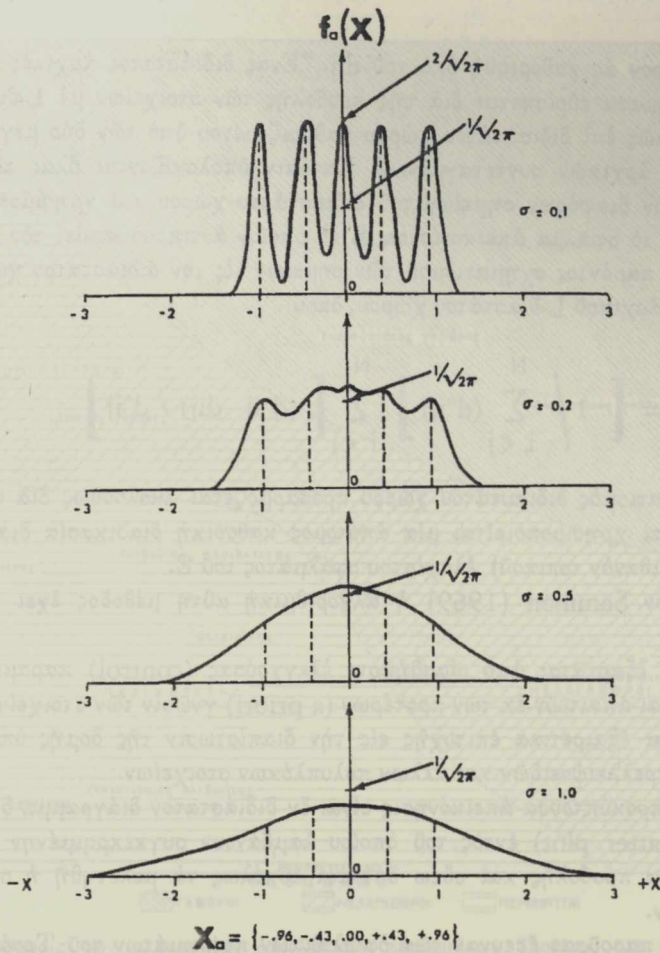
$$g(X, X_i) = \frac{1}{(2\pi)^{p/2} \sigma^p} \cdot \exp \left[\frac{-(X-X_i)'(X-X_i)}{2\sigma^2} \right] \quad (2)$$

ὅπου σ εἶναι μία παράμετρος ὁμαλοποιήσεως. Ὡς ἐκ τούτου ἡ ὑπολογιζομένη συνάρτησις πυκνότητος διὰ τὴν a -οστὴν κατηγορίαν εἶναι

$$f_a(X) = \frac{1}{(2\pi)^{p/2} \sigma^p} \cdot \frac{1}{m} \sum_{i=1}^m \exp \left[\frac{-(X-X_{ai})'(X-X_{ai})}{2\sigma^2} \right] \quad (3)$$

ὅπου X_{ai} εἶναι τὸ i -οστὸν καθοδηγητικὸν πρότυπον ἀπὸ τὴν κατηγορίαν a .

Τὸ ἀποτέλεσμα ὁμαλοποιήσεως τὸ ὁποῖον ἐπιτυγχάνεται δι' αὐξήσεως τοῦ σ δεικνύεται διὰ μίαν μονοδιάστατον περίπτωσιν εἰς τὴν εἰκόνα 1. Ὅσον τὸ σ αὐξάνεται, οἱ πέντε εὐδιάκριτοι τύποι (modes) οἱ ἀντιστοιχοῦντες εἰς τὰς θέσεις τῶν δοκιμαζομένων δειγμάτων σὺν τῷ χρόνῳ ὁμαλοποιοῦνται μέχρις ὅτου ἐπιτευχθῆ μία συμμετρικὴ μονοτυπικὴ συνάρτησις πυκνότητος. Μία λεπτομερὴς ἀνάλυσις αὐτῆς τῆς ἐπεξεργασίας δύναται νὰ ἀνευρεθῆ εἰς τὸν Specht (1967a, σελ. 310—311). Δυνατὸν νὰ εἶναι χρήσιμον εἰς ὠρισμένας περιπτώσεις νὰ τροποποιεῖ κανεὶς τὸ « σ » δι' ἐκάστην τάξιν ἂν καὶ τοῦτο δὲν ἔχει χρησιμοποιηθῆ εἰς τὴν ἐργασίαν τοῦ Howarth (1971) οὔτε εἰς τὴν παροῦσαν. Ἡ ἐκθετικὴ μορφή συναρτήσεως ἔχει προγραμματισθῆ ὑπὸ τοῦ Howarth (1971) διὰ τὸν ἠλεκτρονικὸν διερευνητὴν τύπου CDC 6600, εἶναι ἐξαιρετικὰ σύντομος καὶ ὁ Specht (1967) περιγράφει ἐξαιρετικὰ ἀποτελέσματα ἐπιτευχθέντα διὰ τῆς μεθόδου ταύτης.



Εικ. 1: Υπολογισθείσα μονοδιάστατος συνάρτησις τής πυκνότητος των πιθανοτήτων δι' εν σύνολον 5 καθοδηγητικών (training) δειγμάτων δι' αδήσεως των τιμών τής παραμέτρου ομαλοποιήσεως σ (Κατά SPECHT, 1967a και HOWARTH, 1973).

ΑΛΓΟΡΙΘΜΟΣ ΜΕΘΟΔΟΣ ΜΗ ΓΡΑΜΜΙΚΗΣ ΑΠΕΙΚΟΝΙΣΕΩΣ (Non-linear mapping algorithm)

Ἡ ἀλγόριθμος μέθοδος τής μὴ γραμμικῆς ἀπεικονίσεως δύναται νὰ χαρτογραφήσῃ ἐν σύνολον ἐκ p διαγυσμάτων, N -διαστάτου χώρου εἰς δύο διαστάσεις, μετὰ τοῦ μικροτέρου δυνατοῦ λάθους. Ἡ μέθοδος αὕτη περιγράφεται ὑπὸ τοῦ Sammon (1969), θεωρεῖται δὲ ὡς μία ἐκ τῶν λίαν ἰσχυρῶν μεθόδων δι' ἀνεύρεσιν τής δομῆς ἐκάστης δειγματοληπτικῆς ὁμάδος.

Ἡ ἀπόστασις μεταξύ τῶν διανυσμάτων X_i καὶ X_j εἰς L -διάστατον χώρον ἀς καθορισθῇ (Sammon, 1969 καὶ Howarth, 1973) ὑπὸ τῆς Εὐκλείδειου ἀποστάσεως d^*_{ij} καὶ ἡ ἀπόστασις μεταξύ τῶν ἀντιστοιχοῦντων διανυσμάτων Y_i καὶ Y_j εἰς δι-

διάστατον χώρον ὡς καθορισθῆ ὑπὸ τοῦ d_{ij} . Ἐνας διδιάστατος ἀρχικός σχηματισμὸς διὰ τὰ διανύσματα εὐρίσκεται διὰ τῆς προβολῆς τῶν στοιχείων μὲ L-διάστατον χώρον ὀρθογωνικῶς ἐπὶ διδιαστάτου χώρου καθοριζομένου ὑπὸ τῶν δύο μεγίστων διακυμάνσεων τῶν ἀρχικῶν συντεταγμένων. Κατόπιν ὑπολογίζονται ὅλαι αἱ ἀποστάσεις d_{ij} μεταξὺ τῶν διαφόρων σημείων τοῦ διδιαστάτου χώρου καὶ χρησιμοποιοῦνται διὰ νὰ καθορισθῆ τὸ σφάλμα ἀπεικονίσεως E τὸ ὁποῖον ἀντιπροσωπεύει τὸν βαθμὸν ἀντιστοιχείας τοῦ παρόντος σχηματισμοῦ τῶν σημείων εἰς τὸν διδιάστατον χώρον πρὸς τὰ N σημεία τοῦ ἀρχικοῦ L-διαστάτου χώρου, ὅπου

$$E = \left[1 / \sum_{i,j < j}^N (d^*_{ij}) \right] \sum_{i < j}^N \left[(d^*_{ij} - d_{ij}) / d^*_{ij} \right]$$

Ὁ σχηματισμὸς διδιαστάτου χώρου προσαρμόζεται ἀκολούθως διὰ νὰ σμικρυνθῆ τὸ σφάλμα καὶ χρησιμοποιεῖται μία ἀπότομος καθοδικὴ διαδικασία διὰ τὴν ἀνακάλυψιν ἐνὸς (πιθανὸν τοπικοῦ) ἐλαχίστου σφάλματος τοῦ E.

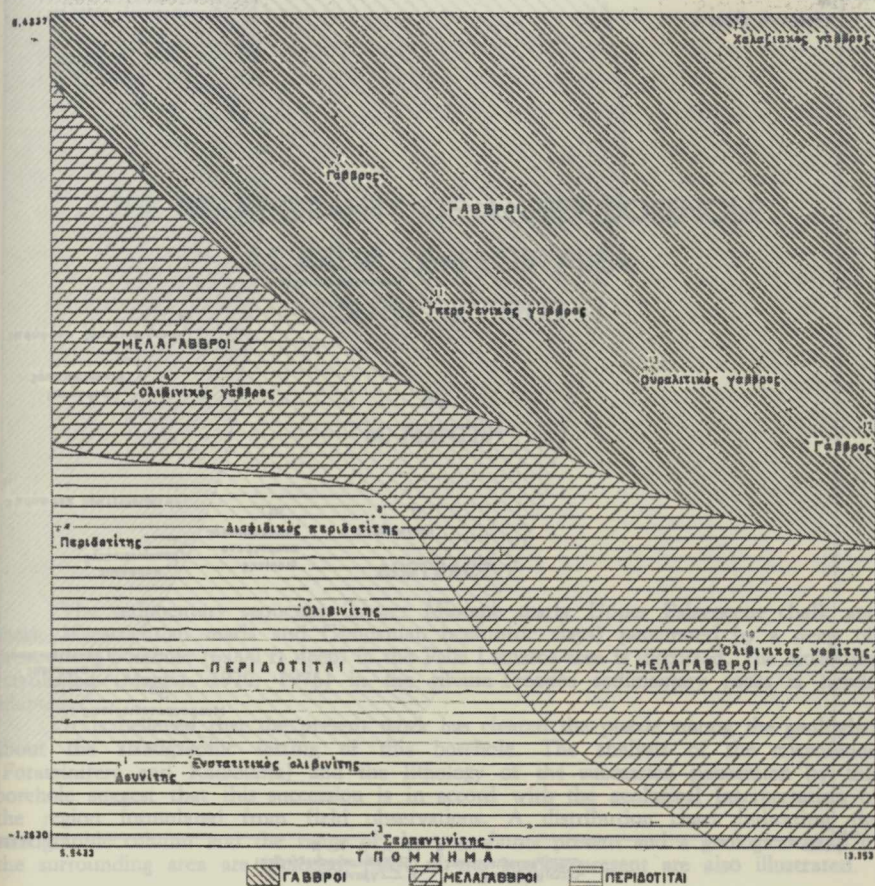
Κατὰ τὸν Sammon (1969) ἡ ἀλγοριθμικὴ αὕτη μέθοδος ἔχει τὰ ἀκόλουθα προτερήματα:

- (α) Δὲν ἐξαρτᾶται ἀπὸ οἰασδῆποτε ἐλεγχούσας (control) παραμέτρους, αἱ ὁποῖαι ἀπαιτοῦν ἐκ τῶν προτέρων (a priori) γνῶσιν τῶν στοιχείων.
- (β) Εἶναι ἐξαιρετικὰ ἐπιτυχῆς εἰς τὴν διαπίστωσιν τῆς δομῆς ὑπερσφαιρικῶν, ὑπερELLIψοειδῶν καὶ ἄλλων πολυπλόκων στοιχείων.
- (γ) Ἡ προκύπτουσα ἀπεικόνισις εἶναι ἐν διδιάστατον διάγραμμα διασκορπισμοῦ (scatter plot) ἐντὸς τοῦ ὁποῖου λαμβάνουν συγκεκριμένην θέσιν τὰ σημεία προβολῆς καὶ οὕτω δύναται εὐκόλως νὰ μελετηθῆ ἡ σχέσις μεταξὺ τῶν.

Εἰς τὴν παρούσαν ἔρευναν τῶν ὀφιολιθικῶν πετρωμάτων τοῦ Τροόδου ἐφηρμόσθη ὑπὸ τοῦ γράφοντος ἡ ἀνωτέρω μέθοδος ἐπὶ τῶν πλουτωνίων καὶ τῶν ὀξίνων πετρωμάτων μόνον, τὰ ἀποτελέσματα δὲ ἦσαν λίαν ἐπιτυχῆ.

Οἱ διάφοροι πετρολογικοὶ τύποι τῶν πλουτωνίων πετρωμάτων, ὡς δεῖκνύεται εἰς τὴν εἰκόνα 2, καταλαμβάνουν συγκεκριμένας θέσεις ἐντὸς τοῦ χάρτου ἀναλόγως τῆς χημικῆς τῶν συστάσεως. Οὕτω οἱ περιδοτῆται συγκεντροῦνται ἐντὸς τοῦ ἐνὸς ἄκρου τοῦ ὀρθογωνίου, οἱ γάδδροι ἐντὸς τοῦ ἐναντι ἄκρου καὶ οἱ μελαγάδδροι μεταξὺ τῶν ἄνω τύπων πετρωμάτων. Χαρακτηριστικὸν εἶναι ὅτι οἱ δουνῖται καὶ οἱ χαλαζιακοὶ γάδδροι λαμβάνουν ἀκραίας θέσεις ἐντὸς τοῦ διαγράμματος. Βάσει τῶν ἀνωτέρω δεδομένων δύναται νὰ χαραχθοῦν (Εἰκ. 2) χαρακτηριστικαὶ περιοχαὶ διὰ τοὺς περιδοτῆτας, μελαγάδδρους καὶ γάδδρους.

Ἡ ἐφαρμογὴ τῆς μεθόδου ταύτης ἐπὶ τῶν ὀξίνων ὀφιολιθικῶν πετρωμάτων τοῦ Τροόδου ἔδωσε πλήρη διαχωρισμὸν μεταξὺ γρανοδιοριτικῶν πορφυρῶν ἀφ' ἐνὸς καὶ γρανοφυρῶν καὶ γρανοφυρικῶν μικρογρανοδιοριτῶν ἀφ' ἑτέρου (Εἰκ. 3). Ἐπίσης παρατηρεῖται πλήρης διαχωρισμὸς τῶν ὀξίνων τούτων πετρωμάτων ἐκ τῶν χαλαζιακῶν γάδδρων (Εἰκ. 3).



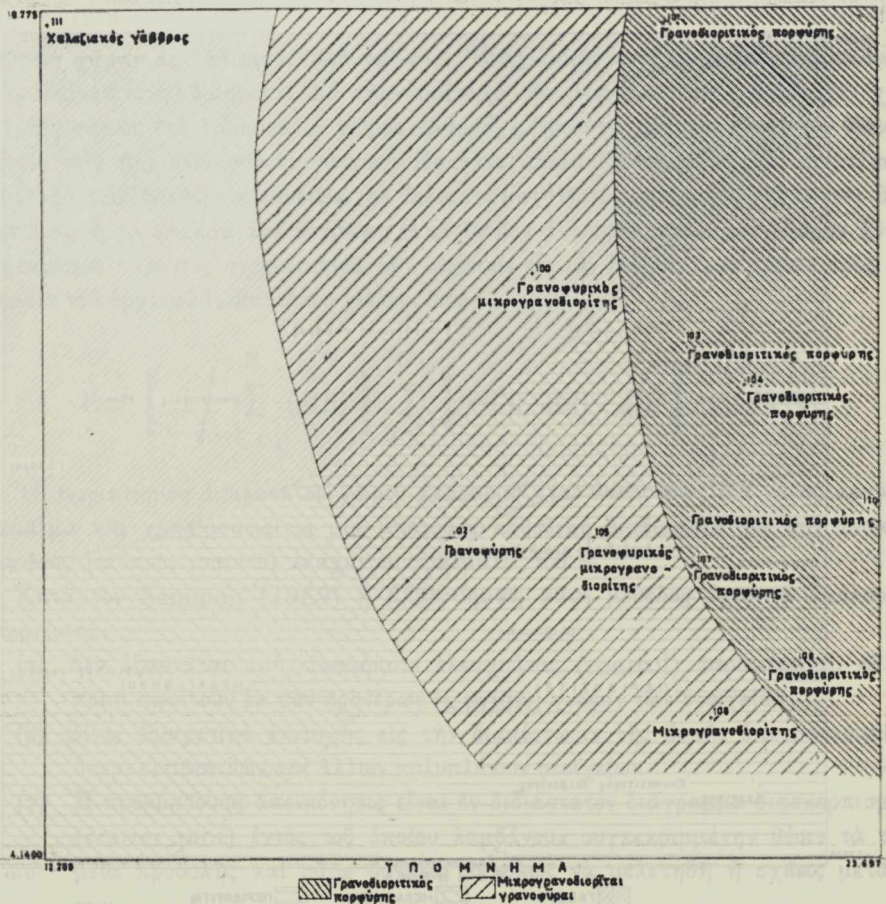
Εικ. 2: Ταξινόμησης των πλουτωνίων οφιολιθικών πετρωμάτων Τροόδους διά τής αλγορίθμου μή γραμμικής απεικόνισης.

ΣΥΜΠΕΡΑΣΜΑΤΑ

Τα αποτελέσματα τής προκαταρκτικής ταύτης έρευνας διά τής εφαρμογής των άνωτέρω δύο μεθόδων εις τήν πετρολογικήν ταξινόμησιν είναι έξαιρετικά ενθαρρυντικά, αι μέθοδοι δέ αύται καταλλήλως χρησιμοποιούμεναι δύνανται νά συμβάλουν μεγάλως εις τήν ταξινόμησιν και άλλων γεωλογικών δεδωμένων.

ΕΥΧΑΡΙΣΤΙΑΙ

Έκφράζονται εύχαριστίαι εις τό Κέντρον Έρευνών τής Νέας Υόρκης "Rome Air Development Centre" διά τήν διάθεσιν του αλγορίθμου προγράμματος μή γραμμικής απεικόνισης μέσω του Imperial College of Science and Technology.



Εικ. 3: Ταξινόμησης των όξινων όφιολιθικών πετρωμάτων Τροόδους δια της αλγορίθμου μη γραμμικής απεικόνισης.

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THE STRATIGRAPHY OF A DEEP BOREHOLE AT PALIA LEMESOS AREA SOUTH CYPRUS

BY
M. MANTIS*

ABSTRACT

The sedimentary sequence (Lower Miocene marls, Upper Palaeocene chalk and chert, Maestrichtian marls and Campanian bentonitic clays) penetrated by a deep oil prospecting borehole (6,000 ft deep) in the Palia Lemesos area is discussed. The biozoning established (Mantis, 1970, 1976) in the circum-Troodos sedimentary rocks is herein adopted.

It is believed that the present work has cleared the puzzle among the geologists about the stratigraphic setting of this borehole. The analysis of the microfauna (Foraminifera and Radiolaria) and the lithology of the succession penetrated by this borehole suggest that this succession is in accord with the geological interpretation of the region formulated from field observations. A distribution chart indicating the stratigraphic column and the range of the microfauna present and a geological map of the surrounding area are included. Most of the species present are also illustrated.

INTRODUCTION

During the years 1950—1956 the Oil Prospectors Ltd., a local oil prospecting company drilled a deep borehole near Moni power station in the Palia Lemesos area. This borehole reached a depth of 6,000 feet. Ditch samples from this borehole were made available for micropaleontological analysis. Since several misunderstandings have been previously created as to the stratigraphic column of this borehole and due to the fact this is the deepest borehole ever drilled in this area it is worth dealing with it in order to clarify the puzzle so far created. It is quite possible that problems that could not be solved in the past were due to a non-systematic analysis of the succession. Most of the material analysed was contaminated due to cavings or collapsing during drilling operations.

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Thirty samples from the sedimentary succession penetrated by this borehole were carefully analysed and evaluated and as a result the accompanied stratigraphic column was formulated.

It is of importance to note that this borehole penetrated through Lefkara and Moni sediments. The analysis of the samples from the Lefkara succession indicates that the major horizon of the massive chalk and the marls of Eocene and Oligocene age is missing and that the Lower Palaeocene succession is not present. The Moni formation attained its maximum thickness of 2130 ft in this borehole.

STRATIGRAPHY

The succession penetrated by this borehole can be summarised as follows:-

The uppermost sixty feet consist of marly chalk and foraminiferal biomicritic limestone of Lower Miocene age. It forms part of the **Globigerinita dissimilis** Zone and represents part of the Upper Lefkara Formation. It yielded a rich planktonic foraminiferal assemblage. This horizon overlies unconformably the Pano Lefkara Formation.

The Pano Lefkara Formation is represented by a 230 feet thick succession. It consists of chalk, marl and chert. It yielded a rich planktonic foraminiferal assemblage which is within the **Globorotalia valascoensis** Zone of Upper Palaeocene age. Three hundred metres north of the boring point on the road cutting similar rocks are outcropping and they dip 30° degrees southwards. This succession indicates an alternating sequence of chalk, marl and chert. Chert bands are up to six inches thick while the thickness of marl and chalk bands is variable. The Pano Lefkara Formation overlies unconformably the Lower Lefkara marls.

The Lower Lefkara marls is represented by a 310 ft succession of marl and chalk. It consists of chalky and clayey marls which yielded a rich **Globotruncana** assemblage. It is within the **Globotruncana genseri** Zone of Maestrichtian age. Surrounding outcrops are dipping 45°—60° degrees southwards. This succession normally overlies the Campanian bentonitic clays of the Moni Formation.

The Moni Formation is represented by the thickest succession ever measured either as outcrop or subsurface sections. It is 2130 feet thick. It yielded a rich radiolarian assemblage which is within the **Dictyomitra multicostata** Zone of Campanian age. It rests on the Upper Pillow lavas. This borehole penetrated through 3,370 ft of igneous rocks. It is doubtful whether the whole succession of Upper Pillow Lava has been penetrated through.

A. UPPER LEFKARA FORMATION

This formation has been originally created to embrace the sedimentary sequence of the Upper Lapithos Formation surrounding the Troodos massif. This formation lithologically consists of impure chalk and chalky marls. The micropalaeontological analysis of several outcrop and subsurface profiles suggest that this formation was deposited during Aquitanian - Burdigalian times. The succession penetrated by this borehole is only sixty feet thick and consists of chalky marl and chalks where planktonic foraminifera are abundant. Among those species of biostratigraphic importance are:-

Globigerinoides trilobus (REUSS), *Globigerinoides altiapertura* BOLLI *Globigerinida dissimilis* (CUSHMAN and BERMUDEZ), *Globigerina praebulloides* BLOW. This fauna is within the *Globigerinida dissimilis* Zone of Lower Miocene age. This Zone was originally recognised and described in the subsurface profiles of the Ipsonas - Akrotiri area in borehole EB 48/68 with a maximum thickness of 100 ft (Mantis, 1970). Later it was noticed that this zone embraces sediments of greater thickness. The research and detailed mapping of these sediments is still in progress.

B. PANO LEFKARA FORMATION

The Pano Lefkara Formation embraces the chalk and chert unit of the Middle-Lapithos and Middle Lefkara group in the circum-Troodos sedimentary sequence. This formation is typified in the Pano Lefkara area. Its type locality in Pano Lefkara area has been studied and investigated in great detail and a zoning system has been already proposed. Its age range from Upper Palaeocene to Lower Eocene (Mantis, 1970, 1973). Its maximum known thickness is 900 ft. The succession penetrated by this borehole is only 230 ft of chalky marl and chert which yielded a planktonic Foraminiferal assemblage mainly of keeled *Globorotalias*. Among those of stratigraphic importance are: *Globorotalia acuta* TOULMIN *Globorotalia velascoensis* CUSHMAN *Globorotalia oclusa* LEOBLICH AND TAPPAN *Globorotalia angulata* WHITE *Globigerina velascoensis* CUSHMAN *Globigerina triloculinoides* PLUMMER. The faunal assemblage of this succession is within the *Globorotalia velascoensis* Zone of Upper Palaeocene Landenian age. This zone was originally erected to embrace the sedimentary sequence outcropping south of Lapithos village. The thickness of these sediments is not more than 100 ft. In the circum-Troodos sedimentary sequence thicker deposits have been assigned to this zone.

C. LOWER LEFKARA FORMATION

The sedimentary sequence penetrated by this borehole and assigned to this formation consists of pink clayey marls 310 feet thick. The surrounding outcrops of this formation have an irregular direction of dip. Dips to the south range from 30° to 60° degrees. The maximum thickness of outcrops measured is 80 feet almost one and a half miles north of the boring site.

The material analysed yielded a rich foraminiferal assemblage mainly of Globotruncana species. The most common ones are:- *Globotruncana area* (CUSHMAN) *Globotruncana gagnebini* TILEV *Globotruncana stuarti* (De LAPARENT) *Globotruncana ganseri* BOLLI *Rugoglobigerina rugosa* (PLUMMER) *Bolivinoidea draco* *Gumbelina globosa* (HERENBERG).

This succession is assigned to the *Globotruncana ganseri* Zone of Maestrichtian age. It is obvious that an unconformity exists between this horizon and the overlying beds.

D. THE MONI FORMATION

The Moni Formation is hereby represented by a thick bentonitic clay succession. It is most probable that this is the thickest succession of bentonitic clays so far studied in Cyprus. This borehole penetrated 2.130 feet of bentonitic clays with silica sand bands. The material analysed yielded a rich radiolarian assemblage. The most common radiolarian species present are:-

Dictyomitra multicostata Zittel *Pseudoaulophacus lenticularis* WHITE *Pseudoaulophacus parguerensis* PESSAGNO *Pseudoaulophacus floresensis* PESSAGNO *Pseudoaulophacus gallowayi* WHITE *Lithostrobos punctulatus* PESSAGNO. This succession is assigned to the *Dictyomitra multicostata* Zone of Campanian age. This formation is most likely overlying the Pillow Lava series. It is not known, probably we will never find out unless another hole is drilled in this area, whether the lower sequence of this horizon represents part of the so called Perapedhi mudstones and radiolarites. One of the samples analysed included a few chippings of pink mudstone.

E. PILLOW LAVA

The Pillow Lava surface was penetrated at 2.630 ft and lavas continued to be found to a depth of 6.000 feet. Only a few samples were studied and it is doubtful whether this borehole penetrated through the Lower Pillow lava series. The nearest outcrop of Upper Pillow Lava is almost three miles north of the boring point.

STRUCTURE

The geological and tectonic setting of the surrounding area is within the frame of the structure of the Southern Troodos area. The nearby Lefkara and Moni outcrops are folded and faulted.

The major fold axis has an E-W direction while the direction of faults is variable. The fault planes are generally steeply dipping to the south forming a step like faulting system having a downthrow of almost 2500 feet. The folding and faulting of the area took place during Miocene times.

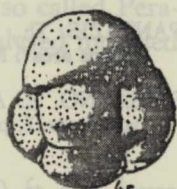
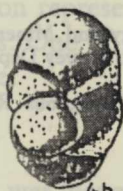
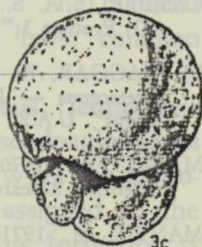
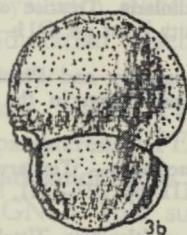
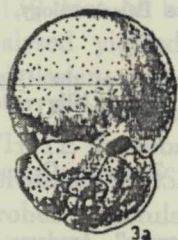
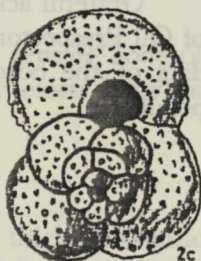
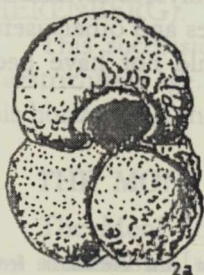
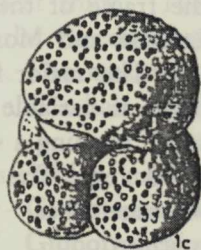
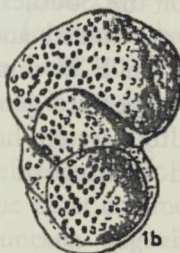
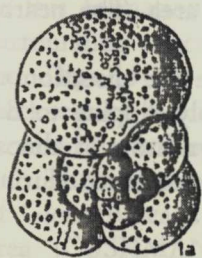
ACKNOWLEDGEMENT

Grateful acknowledgement is expressed to Mr. Polyvios Kyriakides of Oil Prespectors Ltd who kindly supplied the samples and other useful data of the borehole without which this study would not have been possible.

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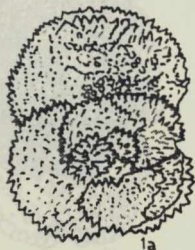
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PLATE 1



- 1a-c *Globigerina triloculinoides* (PLUMMER)
 2a-c *Globigerinoides triloba altiapertura* (BOLLI)
 3a-c *Globigerinoides triloba triloba* (REUSS)
 4a-c *Globigerinita unicavus* BOLLI, LEOBLICH AND TAPPAN
 ALL BY X75

PLATE 2



1a



1b



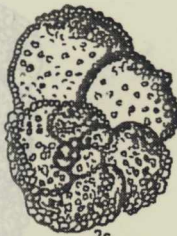
1c



2a



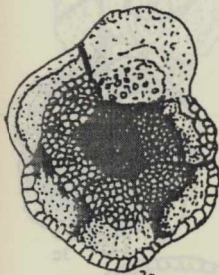
2b



2c



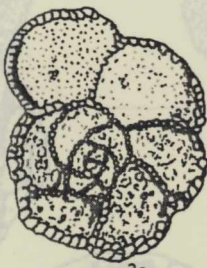
2d



3a



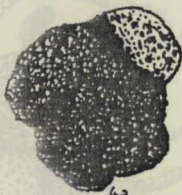
3b



3c



3d



4a



4b



4c

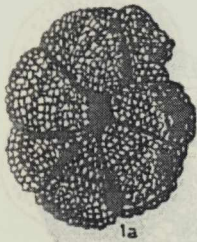
1a-c *Globorotalia aequa* CUSHMAN AND RENZ

2a-c *Globorotalia acuta* TOULMIN

3a-c *Globorotalia velascoensis* (CUSHMAN)

ALL BY X76

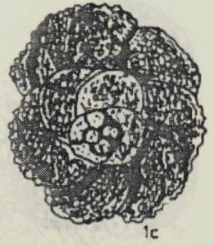
PLATE 3



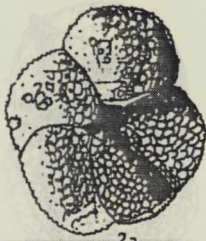
1a



1b



1c



2a



2b



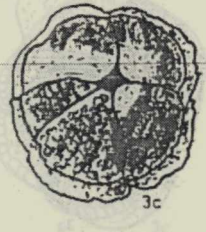
2c



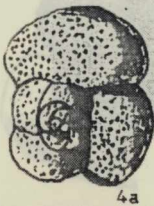
3a



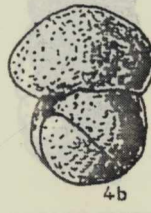
3b



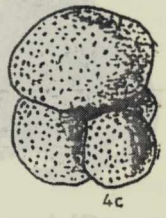
3c



4a



4b



4c

1a-c *Globorotalia angulata abundocamerata* BOLLI

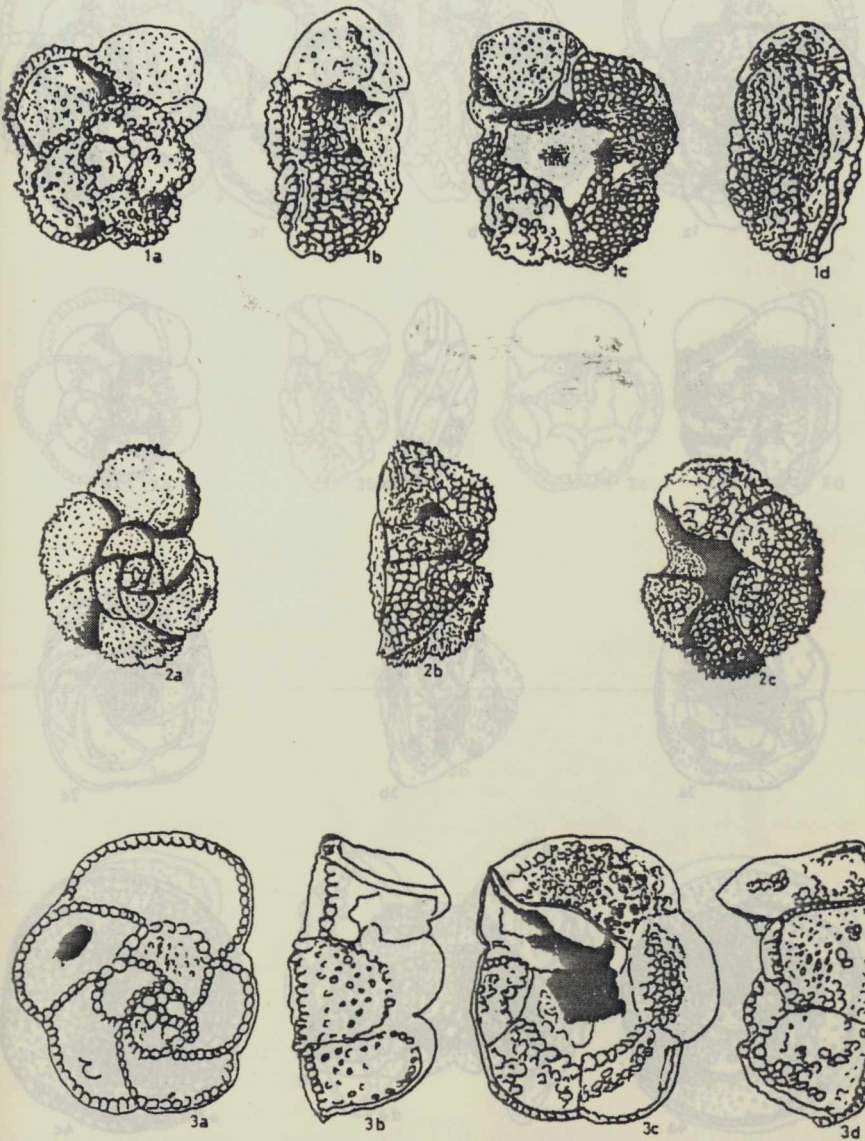
2a-c *Globorotalia convexa* SUBBOTINA

3a-c *Globorotalia pussila* BOLLI

4a-c *Globigerina velascoensis* (CUSHMAN)

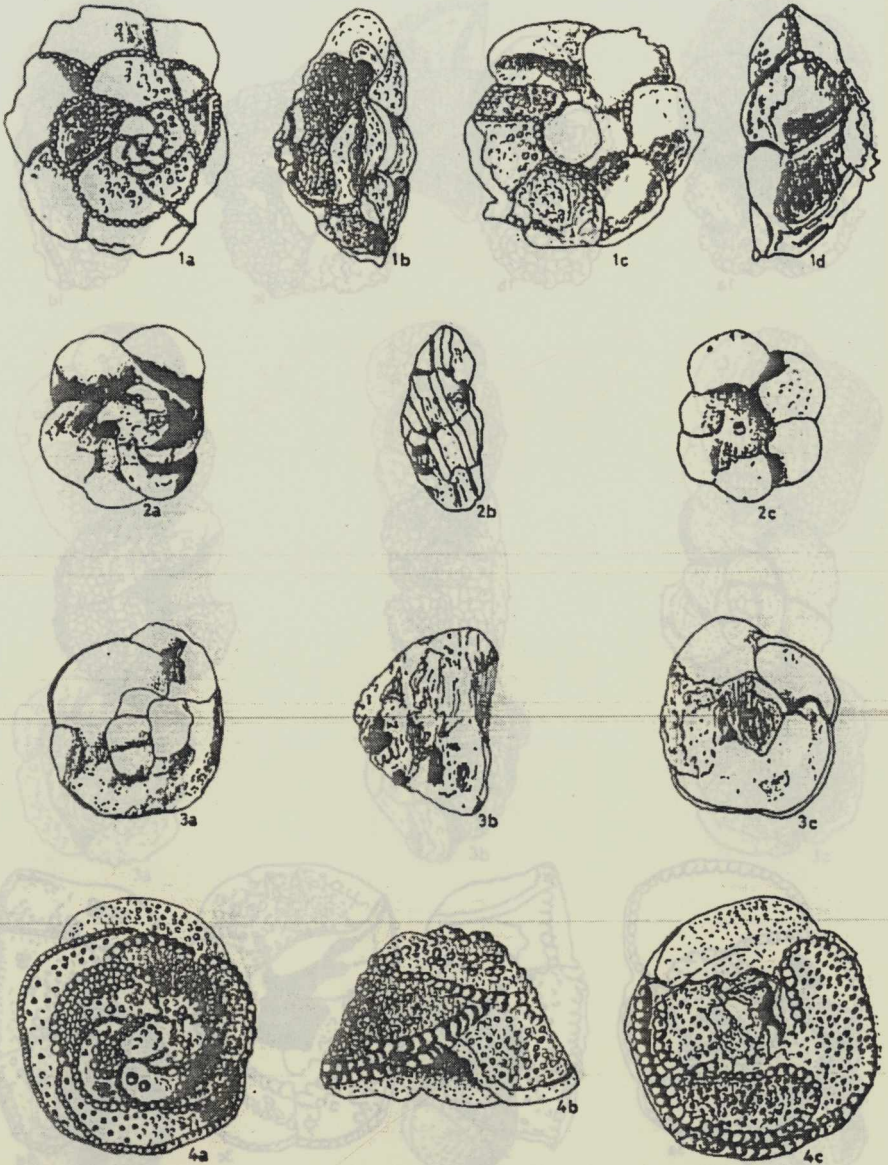
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PLATE 4



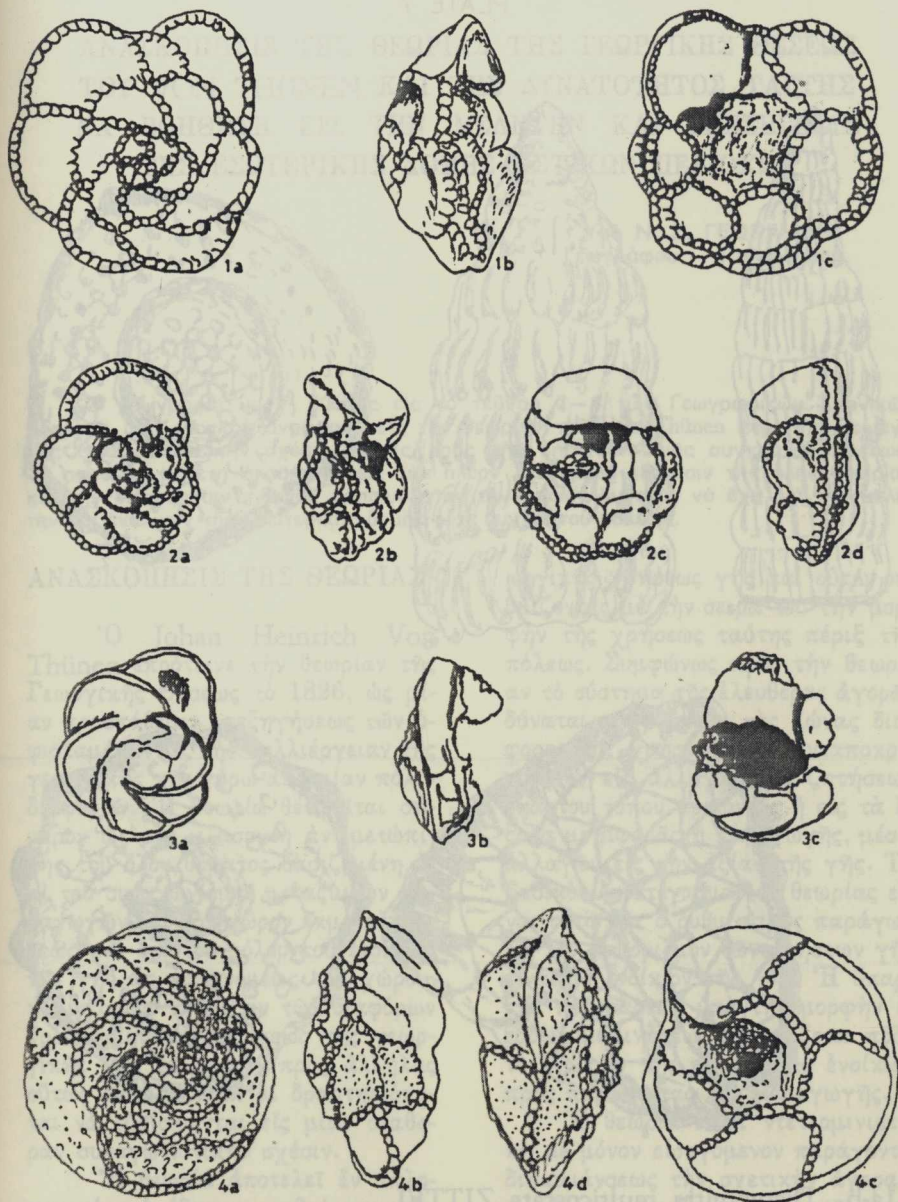
1a-d *Globotruncana dicarinata* (PESSAGNO)
1a-c *Globotruncana abanthesma* (LEOBLICH AND TAPPAN)
3a-d *Globotruncana gansseri gansseri* (BOLLI)
ALL BY X76

PLATE 5



1a-d *Globotruncana conica* WHITE
 2a-c *Globotruncana bulloides* VOLGER
 3a-c *Globotruncana condusa* CUSHMAN
 4a-c *Globotruncana condusa patelliformis* GANDOLFI
 ALL BY X60

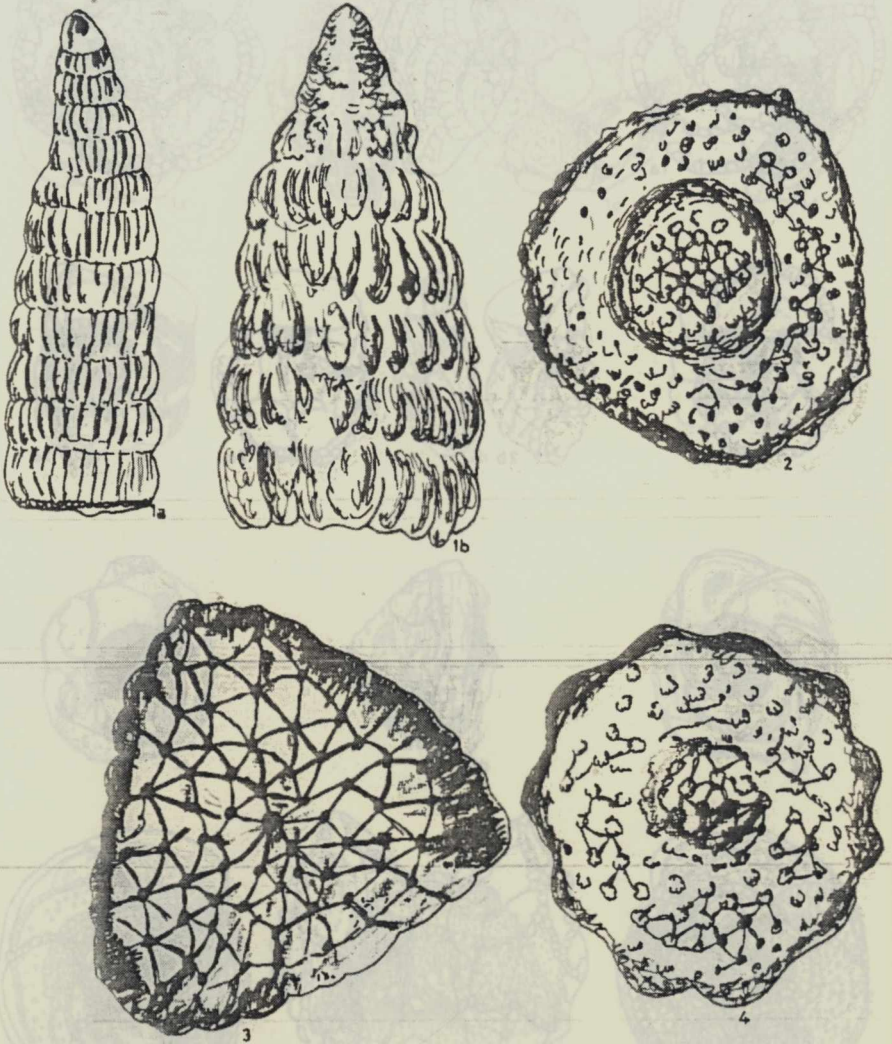
PLATE 6



- 1a-c *Globotruncana arca* (CUSHMAN)
 2a-d *Globotruncana gagniebini* (TILEV)
 3a-c *Globotruncana ventricosa* WHITE
 4a-d *Globotruncana stuarti* (DE LAPPARENT)

ALL BY X76

PLATE 7



- 1a-b *Dictyomitra multicostata* ZITTEL
2 *Pseudoaulophacus floresensis* PESSAGNO
3 *Pseudoaulophacus gallowayi* WHITE
4 *Pseudoaulophacus pargueraensis* PESSAGNO

ALL BY X210

ΑΝΑΣΚΟΠΗΣΙΣ ΤΗΣ ΘΕΩΡΙΑΣ ΤΗΣ ΓΕΩΡΓΙΚΗΣ ΘΕΣΕΩΣ
ΤΟΥ VON THÜNEN ΚΑΙ ΤΗΣ ΔΥΝΑΤΟΤΗΤΟΣ ΤΑΥΤΗΣ
ΝΑ ΒΟΗΘΗΣΗ ΕΠΙ ΤΗΝ ΜΕΛΕΤΗΝ ΚΑΙ ΕΠΙΣΗΓΗΣΙΝ
ΤΗΣ ΕΣΩΤΕΡΙΚΗΣ ΔΟΜΗΣ ΑΣΤΙΚΩΝ ΠΕΡΙΟΧΩΝ

Υπό Ν. Σ. ΓΕΩΡΓΙΑΔΗ
Γεωγράφου — Πολεοδόμου.

ΕΙΣΑΓΩΓΗ

Ὁ γεωγράφος κ. Γ. Καδῆς εἰς τὸ τεύχος 7—8 τῶν Γεωγραφικῶν Χρονικῶν παρέσχε μίαν γενικὴν ἀναφορὰν εἰς τὴν θεωρίαν τοῦ Von Thünen περὶ τῆς Γεωργικῆς Θέσεως καὶ τὴν σχέσιν ταύτης πρὸς τὴν ἐπέκτασιν μιᾶς συγχρόνου πόλεως. Ἡ παρούσα μελέτη ἀποσκοπεῖ εἰς τὴν πλέον λεπτομερῆ ἐξέτασιν τῆς ὅλης θεωρίας καὶ τὴν διερεῦνησιν πιθανῆς χρησιμότητος τὴν ὅποιαν δυνατόν νὰ ἔχη διὰ τὴν μελέτην καὶ ἀνάλυσιν τῆς ἐσωτερικῆς δομῆς μιᾶς συγχρόνου πόλεως.

ΑΝΑΣΚΟΠΗΣΙΣ ΤΗΣ ΘΕΩΡΙΑΣ

Ὁ Johan Heinrich Von Thünen ἐπρότεινε τὴν θεωρίαν τῆς Γεωργικῆς Θέσεως τὸ 1826, ὡς μίαν προσπάθειαν ἐπεξηγήσεως τῶν ὑφισταμένων εἰς τὴν καλλιέργειαν τῆς γεωργικῆς γῆς γύρω ἀπὸ μίαν πόλιν διαφορῶν. Ἡ θεωρία θεωρεῖται σήμερον ὡς μία κλασσικὴ ἀντιμετώπισης τοῦ ὄλου θέματος βασισμένη ἐπὶ τοῦ συναγωνισμοῦ μεταξὺ τῶν παραγωγῶν διὰ τὸν χῶρον ἐκμεταλλεύσεως καὶ ἐπὶ τοῦ ρόλου τοῦ ἐνοικίου τῆς γῆς ὡς κατανομέως τοῦ χώρου, καλύπτουσα τὴν θέσιν τῶν διαφόρων δραστηριοτήτων χρήσεως τῆς γεωργικῆς γῆς ἐν σχέσει πρὸς ἀλλήλας οὕτως ὥστε ἅπασαι αἱ δραστηριότητες νὰ εὐρίσκωνται εἰς μίαν σταθερὰν συναγωνιστικὴν σχέσιν.

Ἡ θεωρία ἀποτελεῖ ἕν ἀπλοποιημένο ὑπόδειγμα ρυθμίσεως τῶν χρήσεων γῆς ἀπὸ τὸ σύστημα τῆς ἐλευθέρας ἀγορᾶς, ἀνεπτυγμένο διὰ νὰ τονίσῃ τὴν ἐπίδρασιν τοῦ κόστους μεταφορᾶς ἐπὶ τῆς ἀξίας τῆς γῆς εἰς τὸν καθορισμὸν τοῦ ἐνοικίου τῆς γε-

ωργικῆς χρήσεως γῆς καὶ οὕτω ρυθμίζοντας μὲ τὴν σειράν του τὴν μορφήν τῆς χρήσεως ταύτης περίξ τῆς πόλεως. Συμφώνως πρὸς τὴν θεωρίαν τὸ σύστημα τῆς ἐλευθέρας ἀγορᾶς δύναται νὰ ρυθμίξῃ τὰς ζώνας διαφορετικῆς χρήσεως γῆς ἀνταποκρινόμενον εἰς ἀλλαγὰς τῆς ζήτησεως ἐκάστου τύπου προϊόντος ἢ εἰς τὰ ἔξοδα μεταφορᾶς ἢ παραγωγῆς, μέσῳ ἀλλαγῶν εἰς τὴν ἀξίαν τῆς γῆς. Τὸ βασικὸν ἐπιστέγασμα τῆς θεωρίας εἶναι οὕτω ὅτι ὁ ρυθμιστικὸς παράγων εἰς τὸν καθορισμὸν τῶν χρήσεων γῆς εἶναι τὸ ἐνοίκιον τῆς γῆς. Ἡ ὑπαρξῆς προσβάσεως ὑπὸ τὴν μορφήν ἐξόδων διακινήσεως συσχετίζεται πρὸς τὸ ἐνοίκιον τῆς γῆς καὶ τὸ ἐνοίκιον πρὸς παράγοντας τῆς παραγωγῆς.

Ἡ θεωρία εἶναι ντετερμινιστικὴ μὲ μόνον εἰσαγόμενον παράγοντα διακυμάνσεως τὴν σχετικὴν ἀγοραῖαν ἀξίαν τῶν διαφόρων προϊόντων, μὲ τὴν καθαρὰν ἀξίαν τὴν λαμβανομένην ἀπὸ τὸν παραγωγὸν ἐνδὸς προϊόντος θεωρουμένην ὡς ἀπόρροια τῆς ἀποστάσεως τοῦ χώρου παραγωγῆς τοῦ προϊόντος ἀπὸ τὸ ἀγοραστι-

κόν κέντρον.

Διὰ τὴν ἀνάπτυξιν τῆς θεωρίας τὸ ὑπόδειγμα Von Thünen λαμβάνει τὴν περίπτωσιν μίας πόλεως εὐρισκαμένης εἰς ἓν ὁμοιομόρφως ἐπίπεδον χῶρον μὲ ἐδάφη τῆς αὐτῆς γονιμότητος εἰς ὅλα τὰ σημεῖα καὶ ὁμοιομόρφους κλιματολογικὰς συνθήκας. Ἡ πόλις αὕτη θεωρεῖται ὡς ὁ οἰκονομικὸς πόλος ἕλξεως ὄλων τῶν δραστηριοτήτων παραγωγῆς καὶ ἐμπορίας τοῦ χώρου. Ὑπὸ τὰς ὡς ἄνω παραδοχὰς ἡ θεωρία ἐξετάζει μίαν ἀπομεινωμένην ἀπὸ τὸν ἕξω αὐτῆς χῶρον περιφέρειαν, τοῦ πεδίου αὐτῆς θεωρουμένου ὡς περικλεισμένου ὑπὸ ἐκτάσεως ἣτις τὸ διαχωρίζει πλήρως ἀπὸ ἄλλας ἀγορὰς καὶ τὰς ἐπιδράσεις αὐτῶν. Αἱ περισσότεραι ἀγροτικὰ οἰκογένεια θεωροῦνται ὅτι κατοικοῦν εἰς τὴν κεντρικὴν πόλιν καὶ ὅτι ἅπασαι αἱ ἀγροτικὰ μονάδα παραγωγῆς ἔχουν τὴν ἰδίαν δυνατότητα προστάσεως πρὸς τὴν πόλιν, ὑποκειμένην μόνον εἰς τὸν παράγοντα τῆς ἀποστάσεως, δεδομένου ὅτι ἡ δυνατότης συγκοινωνίας θεωρεῖται ὡς ὁμοιόμορφος πρὸς ὅλας τὰς διευθύνσεις, μὲ τὰ ἕξοδα μετακινήσεως/μεταφορᾶς ἐξαρτώμενα ἀπὸ τὴν ἀπόστασιν ἐκάστου σημείου πρὸς τὸ κέντρον. Αἱ τιμαὶ τῶν ὕλικῶν καὶ τῶν ἄλλων παραγόντων ἐκμεταλλεύσεως, περιλαμβανομένων καὶ τῶν ἐργατικῶν, θεωροῦνται ὡς ὅμοιαι εἰς ὅλα τὰ σημεῖα, ὅτι δηλαδὴ μετακινουῦνται ἄνευ κόστους μεταφορᾶς. Ἄπαντες οἱ ἰδιοκτῆται γῆς καὶ ἐνοικιασταί, θεωροῦνται ὡσαύτως ὅτι ἐνεργοῦν ὀρθολογιστικῶς πρὸς τὸν σκοπὸν μεγιστοποιήσεως τοῦ κέρδους αὐτῶν, ὑπὸ συνθήκας πλήρους ἀναγωνιστικότητος καὶ ἔχοντες ἅπαντες πλήρεις γνώσεις περὶ τῶν τιμῶν, τοῦ κόστους καὶ τῆς διαθεσιμότητος τῆς γῆς, ἐν ὡς στοιχεῖα τιμῶν καὶ κόστους βάσει τῶν ὁποίων λαμβάνουν τὰς ἀποφάσεις των θεωροῦνται ὡς ἀντικατοπτρίζοντα τὴν πλήρη ἀξίαν τῶν προϊόντων πρὸς τοὺς καταναλωτὰς

καὶ τὸ πλήρες κόστος παραγωγῆς.

Ἐντὸς τῶν πλαισίων τῶν ἀνωτέρω ὑποθέσεων ἡ θεωρία ὑποδεικνύει τὸν τρόπον μὲ τὸν ὅποιον ἡ ἀγορὰ διαθέτει τὴν γῆν οὕτως ὥστε νὰ ἱκανοποιῆ κατὰ μέγιστον βαθμὸν τὰς προτιμήσεις τῶν καταναλωτῶν, ἀνταποκρινομένη εἰς ἀλλαγὰς τῶν προτιμήσεών των ἢ/καὶ εἰς ἀλλαγὰς εἰς τὰ ἕξοδα παραγωγῆς/μεταφορᾶς, διὰ ἀλλαγῶν εἰς τὴν χρῆσιν τῆς γῆς. Ἡ βασικὴ ἰδέα εἶναι ὅτι ἐναλλακτικὰ χρήσεις γῆς συναγωνίζονται πλήρως διὰ τὸν χῶρον ὅστις ἔται διατίθεται ἱκανοποιητικῶς. Αἱ ἀξίαι τῆς γῆς (ἐνοίκια ἢ κεφαλαιουχικὰ ἀξίαι) καθορίζονται ἀπὸ τὴν τιμὴν ἐκάστου προϊόντος καὶ ἀπὸ τὸ κόστος παραγωγῆς καὶ μεταφορᾶς αὐτοῦ, ἐμποδίζουσαι ἔτσι τὴν γῆν ἀπὸ τοῦ νὰ διατεθῆ πρὸς ὀλιγώτερον ἐπικερδῆς χρήσεις. Ἡ μορφή τῆς χρήσεως ἣτις παρέχει τὸ ὑψηλότερον ἐνοίκιον ἔχει τὴν μεγαλυτέραν ἀξίαν διὰ τὴν γῆν καὶ παραμερίζει ὅλας τὰς ὑπολοίπους. Δημιουργοῦνται οὕτω «καμπύλαι προσφορᾶς» συγκλίνουσαι ὅλαι πρὸς τὸ κέντρον τῆς πόλεως. Τὰ ἕξοδα μεταφορᾶς τῶν παραγῶν τῆς γῆς εἶναι ἀνάλογα πρὸς τὴν ἀπόστασιν καὶ τὸ βάρος αὐτῶν καὶ ἔτσι, συμφῶνως πάντοτε τῆς θεωρίας, ἡ παραγωγή τῶν διαφόρων προϊόντων κατανέμεται γύρω ἀπὸ τὸν κεντρικὸν πόλον ὑπὸ μορφήν ὁμοκέντρων ζωνῶν χαρακτηριζομένων ἀπὸ διαφορετικὴν χρῆσιν γῆς ἀναλόγως πρὸς τὰς ἀντιστοίχους τιμὰς καὶ τὰ ἕξοδα μεταφορᾶς ἐκάστου καλλιεργουμένου προϊόντος. Ἡ σύνθεσις τῶν διαφόρων μορφῶν παραγωγῆς εἶναι ἀποτέλεσμα τῆς προσπάθειας ἣτις ἀπαιτεῖται διὰ τὴν μετακίνησιν τῶν προϊόντων ἀνά μονάδα ἀποστάσεως πρὸς τὴν ἀγορὰν καὶ τοῦ βαθμοῦ ἐντατικότητος εἰς τὸν ὅποιον ἐκάστη μονὰς χώρου δύναται νὰ ἀποδώσῃ τὴν ἀπαιτουμένην παραγωγήν, ὑποκειμένην εἰς μειωμένας προσόδους. Ἔτσι, διαφοραὶ εἰς τὴν χρῆσιν τῆς

γῆς μεταξύ τῶν διαφόρων ζωνῶν ἢ δακτυλίων ἀποδίδονται ἀπ' εὐθείας εἰς διακυμάνσεις τῶν ἐξόδων μεταφορᾶς ἅτινα ἐξαρτῶνται ἀπὸ τὴν ἀπόστασιν ἐκ τῆς ἀγορᾶς, τὴν εὐκολίαν μεταφορᾶς καὶ τὸν ὄγκον, θάρρος, καὶ φθαρτότητα τῶν ἀποστελλομένων πρὸς τὴν ἀγορὰν προϊόντων.

Εἰς τὰς ζῶνας αὐτὰς ἢ δακτυλίου τοῦ Von Thünen, προϊόντα μὲ ἀποτόμους ἐπιφανείας ἐνοικίου καλλιεργοῦνται πλησιέστερον πρὸς τὸ κέντρον, μὲ τὴν γῆν χρησιμοποιουμένην ὑπὸ ἐντατικῶν βαθμῶν παράγουσαν προϊόντα μεγάλης φθαρτότητος ἢ ὀγκώδη εἰς τὴν μεταφορὰν. Λόγω τῆς τάσεως τοῦ κόστους μεταφορᾶς νὰ αὐξάνεται μὲ τὴν ἀπόστασιν, γῆ εὐρiskoμένη μακρότερον τοῦ κέντρου θεωρεῖται ὡς ἔχουσα οἰκονομικὰ μειονεκτήματα καὶ ὅτι προσφέρεται διὰ ἐκμεταλλεύσεις μὲ χαμηλὰ μεταφορικὰ ἐξόδα.

ΣΧΟΛΙΑ ΕΠΙ ΤΗΣ ΘΕΩΡΙΑΣ

Ἡ θεωρία ἀνεπτύχθη δασιζομένη ἐπὶ μιᾶς θεωρητικῆς καὶ ἀφηρημένης καταστάσεως. Διαφοραὶ εἰς τὴν γονιμότητα τῶν ἐδαφῶν, τὸ κλίμα καὶ τὴν τοπογραφίαν ἀποτελοῦν τὸν κανόνα εἰς ἀγροτικὰς περιφερείας, διαστρέφουσαι εἰς μῆτρον βαθμῶν τὰς ὑποθέσεις Von Thünen. Δίχτυα συγκοινωνιῶν διαστρέφουσι ὡσαύτως τὴν ὑπόθεσιν περὶ ὁμοιομορφου εἰς τὴν διαβατότητα ὄλων τῶν σημείων. Οἱ ἄνθρωποι δὲν ἐνεργοῦν πάντοτε ὀρθολογιστικῶς καὶ πολὺ σπανίως ἔχουσι εἰς τὴν διάθεσιν των ὄλας τὰς σχετικὰς πληροφορίας περὶ τιμῶν, ἀξιῶν καὶ κόστους, ὅταν λαμβάνουσι μίαν ἀπόφασιν. Ὁ Dunn ἔδειξε ἐπίσης πῶς ἀκόμη καὶ ὅταν ὑποτεθῆ ὅτι τὰ μεταφορικὰ τέλη εἶναι ὁμοιομορφα ὡς ὅστε τὰ ἐξόδα μεταφορᾶς νὰ συσχετίζονται μόνον πρὸς τὸ θάρρος καὶ τὸν ὄγκον τοῦ προϊόντος, τοῦτο δὲν συνεπάγεται ἀπαιρητῆτως ὅτι τὸ προϊόν διὰ τὴν ἀ-

ξίαν τοῦ ὁποίου τὰ ἐξόδα μεταφορᾶς συνιστοῦν τὸ μεγαλύτερον ποσοστὸν, θὰ παράγεται πλησίον τῆς ἀγορᾶς (Dunn, 1954 : 238).

Δέον ἐπίσης νὰ ἀναφερθῆ ὅτι ἐννοιαὶ ὅπως ἡ διαχείρισις, ἡ δυνατότης καὶ ἀποδοτικότητα τῆς γῆς αἰ ὁποῖαι ἐξαρτῶνται καὶ ἀπὸ εἰσαγόμενα εἰς τὴν ἐκμετάλλευσιν ἐξωγενῆ στοιχεῖα, καθορίζουσι εἰς μῆτρον βαθμῶν τὴν παραγωγικότητα τῆς γῆς, διαστρεφόμενου οὕτω ἀκόμη περισσότερο τοῦ θεωρητικοῦ προτύπου Von Thünen. Ὡσαύτως τὸ ἐνοίκιον τῆς γῆς δὲν καθορίζεται μόνον ἀπὸ τὴν τοποθεσίαν αὐτῆς ἀλλὰ καὶ ἡ ποιότης τῆς γῆς ἀποτελεῖ ἐπίσης καθοριστικὸν παράγοντα. Εἰς ἄλλοις παρὰ τῶν μὴ ληφθεῖς ὑπ' ὄψιν εἰς τὸ πρότυπον Von Thünen εἶναι ὅτι ὅ,τιδήποτε συμβαίνει εἰς μίαν περιοχὴν ἐπηρεάζει τὰς ἀξίας εἰς γειτονικὰς περιοχάς, ἢ δὲ γῆ χαρακτηριζομένη ἀπὸ τὴν ἐννοίαν τοῦ ἀκινήτου αὐτῆς δὲν δύναται νὰ ἀποφύγῃ ἐπιρροὰς ἀπὸ ἐξωγενεῖς πρὸς αὐτὴν δυνάμεις. Ἡ θεωρία δὲν λαμβάνει ἐπίσης ὑπ' ὄψιν τὴν ἐπίδρασιν τοῦ ἐμπορίου μεταξύ τῆς περιφέρειας καὶ ἄλλων περιφερειῶν, μακρινῶν ἀγορῶν, δασμολογικῶν δυσχερειῶν καὶ δημοσίων προγραμμάτων καὶ πολιτικῆς ἐπὶ τῆς παραγωγῆς καὶ τῶν τιμῶν, ἐπὶ τῶν γεωργικῶν δραστηριοτήτων. Οὕτω ἐπὶ παραδείγματι, ἡ δασικὴ ἀγορὰ δι' ἔν συνεχερριμμένον προϊόν δὲν εἶναι ἀπαιρητῆτως καὶ ἡ πλησιέστερα πρὸς τὸν τόπον παραγωγῆς αὐτοῦ.

Ἡ θεωρία ἀγνοεῖ ὡσαύτως τὴν ἐπίδρασιν τὴν ὁποῖαν δύναται νὰ ἔχουσι ἐπὶ τῆς διαδικασίας λήψεως ἀποφάσεων διὰ τὴν παραγωγὴν διαφόρων προϊόντων ἢ θέσεις τῶν χρησιμοποιουμένων ὕλικῶν, διαφόρων ἀγορῶν καὶ ἢ ἀλλαγὴ τῶν συνθηκῶν διαθέσεως καὶ ἐμπορίας. Ἡ τεχνολογία τῶν συγκοινωνιῶν ὡς καὶ διάφοροι ὑφιστάμενοι ἐκπτώσεις καὶ διευκολύνσεις εἰς τὰς διακινήσεις τῶν

προϊόντων έχουν μεταβάλει επίσης δραστηκώς τὸν συσχετισμὸν τοῦ τήν στους μεταφορᾶς πρὸς τὴν ἀπόστασιν, παρ' ὅλον δὲ ὅτι ἐξακολουθεῖ νὰ ἐπηρεάζει τὰς ἀποφάσεις τὸ κόστος μεταφορᾶς, ἔπαψε πλέον νὰ εἶναι ἀπόλυτος καθοριστικὸς παράγων.

Τέλος δεόν νὰ λεχθῆ ὅτι ὑπὸ ρὰς σημερινᾶς συνθήκας ἐξασκήσεως τῆς γεωργίας, ἀποτελεῖ ὑπεραπλοποίησιν ἢ θεώρησις ὅτι εἰς γεωργικὸς δακτύλιος ἢ ζώνη ἀπασχολεῖται μὲ τὴν καλλιέργειαν ἐνὸς μόνου προϊόντος. Ἡ γεωργία ἐξασκεῖται σήμερον ὡς σύστημα, μὲ ἀνάμειξιν καὶ ἐναλλαγὰς εἰς τὴν χρήσιν καὶ οἰαδήποτε ζώνη δύναται νὰ συγίσταται ἀπὸ οἰονδήποτε ἀριθμὸν καὶ ποικιλίαν συνδεδασμένων προϊόντων, μὲ τὸν ἀριθμὸν τῶν πιθανῶν ζωνῶν μὴ περιοριζόμενον εἰς τὸν ἀριθμὸν τῶν δυνατῶν προϊόντων ἀλλὰ εἰς ἓν ἀριθμὸν συνδυασμῶν τῶν προϊόντων αὐτῶν.

Δεόν ἐν τούτοις νὰ ἀναγνωρισθῆ ὅτι ἡ θεωρία ἔχει ἀναπτυχθῆ πρὸ 150 περίπου ἐτῶν ὑπὸ ἐντελῶς διάφορα κοινωνικοοικονομικά, πολιτικά καὶ τεχνολογικά δεδομένα, δεικνύει δὲ τὴν ἐπίδρασιν τὴν ὁποῖαν αἱ συγκοινωνιακαὶ διευκολύνσεις καὶ ἡ τοποθεσία ἐν σχέσει πρὸς τὴν ἀγορὰν δυνατὸν νὰ ἔχουν ἐπὶ τῶν δραστηριοτήτων χρήσεως γῆς. Παρ' ὅλον ὅτι ἡ λαδοῦσα χώραν ἀπὸ τῆς ἐποχῆς τοῦ Von Thünen ἀνάπτυξις ἔχει καταστήσει ἐπικερδῆ καὶ οἰκονομικὴν τὴν χρῆσιν διὰ σκοποὺς παραγωγῆς πολλῶν περιοχῶν αἵτινες κατὰ τὸ παρελθὸν δὲν ἦτο δυνατόν νὰ χρησιμοποιηθοῦν, ἐξακολουθοῦν πάντοτε νὰ ὑπεισέρχωνται τὰ κριτήρια τοῦ χρόνου, τῆς προσπάθειας καὶ τοῦ κόστους εἰς τὴν διαδικασίαν διακινήσεως τῶν προϊόντων, περιοχαὶ δὲ εὐρισκόμενα πλησίον τῶν ἀγορῶν ἔχουν σχετικὰ πλεονεκτήματα. Τὰ ἔξοδα μεταφορᾶς ἐξακολουθοῦν νὰ ἐπηρεάζουν τὴν δυνατότητα καταβολῆς ἐνοικίου καὶ τὴν ἔκτασιν τῆς περιοχῆς ἐντὸς τῆς ὁποίας ἀρκετὰ προϊ-

όντα δύναται νὰ παραχθοῦν ἐπικερδῶς. Τὰ ὡς ἄνω ἀποδίδουν εἰς τὴν θεωρίαν σημαντικὸν κύρος, δικαίως δὲ, θεωρεῖται σήμερον ταύτη ὡς πρωτοποριακὴ ἐργασία εἰς τὴν κατανόησιν τοῦ ὅλου προβλήματος. Τὰ θεωρητικὰ τῆς μειονεκτήματα, τὸ ἀφηρημένον τοῦ χώρου ἐπὶ τοῦ ὁποίου βασίζεται καὶ αἱ ἐπαναστατικαὶ ἀλλαγαὶ τοῦ 20οῦ αἰῶνος ἔχουν περιορίσει τὴν σημασίαν αὐτῆς χωρὶς ἐν τούτοις νὰ ἀφαιροῦν ἀπὸ τὴν ἐπίδρασιν τὴν ὁποῖαν εἶχε ἐπὶ τῆς μεταγενεστέρως ἀναπτύξεως τῆς θεωρίας τῆς τοποθεσίας τῶν χρήσεων γῆς, ἀγροτικῶν καὶ μὴ.

Η ΣΥΝΕΙΣΦΟΡΑ ΤΗΣ ΘΕΩΡΙΑΣ ΤΟΥ VON THÜNEN ΕΙΣ ΤΗΝ ΚΑΤΑΝΟΗΣΙΝ ΤΗΣ ΕΣΩΤΕΡΙΚΗΣ ΔΟΜΗΣ ΑΣΤΙΚΩΝ ΠΕΡΙΟΧΩΝ

Ὡς ἀνεφέρθη ἀνωτέρω, ἡ θεωρία ἀνεπτύχθη διὰ μίαν ἀπομεμονωμένην ἀγροτικὴν περιφέρειαν λειτουργοῦσαν ἐντὸς ἐνὸς πλαισίου τῆς προ-βιομηχανικῆς ἐποχῆς. Θὰ προσπαθῶμεν τώρα νὰ ἐξετάσωμεν κατὰ πόσον ἡ μεθοδολογία Von Thünen ἔχει σχέσιν πρὸς τὴν σημερινὴ ἀστικὴν — περιφερειακὴν οἰκονομίαν.

Παρ' ὅλας τὰς ἐπαναστατικὰς μεταβολὰς τῆς ἐποχῆς μας ὁ ρόλος τῆς ἀποστάσεως εἰς τὸν καθορισμὸν καὶ τὴν δημιουργίαν τῆς τάξεως εἰς τὸν φυσικὸν χῶρον δὲν ἔχει εἰσέτι πλήρως ὑπερκερασθῆ. Ὡσαύτως, ἡ βασικὴ κινητήριος δύναμις ἣτις ἐπηρεάζει τὸν καθορισμὸν τῆς θέσεως παραγωγῆς ἐνὸς γεωργικοῦ προϊόντος, εἶναι ἡ ἴδια μὲ τὴν καθορίζουσαν τὴν ἰσορροπίαν ὄλων τῶν οἰκονομικῶν δυνάμεων, ἥτοι ἡ προσπάθεια μεγιστοποιήσεως τῆς οἰκονομικῆς προσόδου. Ἡ προσπάθεια τοῦ Von Thünen ἀπετέλεσε τὴν ἀπαρχὴν ἐνὸς σημαντικοῦ κλάδου τῆς θεωρίας τῆς Ἀστικῆς οἰκονομίας χρή-

σεως γῆς ἣτις ἔχει ἀρκετάς ὁμοιότη-
τας πρὸς τὴν γεωργικὴν τοιαύτην
τοῦ Von Thünen. Εἰς ἀμφοτέρας
οὕτω τὰς θεωρίας οἱ παράγοντες τοῦ
ἐνοικίου ὁδηγοῦν τὴν ἀγορὰν εἰς τὴν
κατανομὴν τῆς γῆς καὶ ἀμφοτέραι
αἱ θεωρίαι ἀποδέχονται μίαν μειωμέ-
νην ἐντατικότητα χρήσεως γῆς μὲ
αὐξανομένην τὴν ἐκ τοῦ κέντρου ἀ-
πόστασιν. Δι' ἀμφοτέρας τὰς θεωρί-
ας ὁ συσχετισμὸς πρὸς συγκοινωνια-
κὰς διευκολύνσεις εἶναι κριτικῆς ση-
μασίας εἰς τὸν καθορισμὸν τῆς ἀπο-
τελεσματικῆς οἰκονομικῆς ἀποστάσε-
ως καὶ ἡ πλέον ἀποδοτικὴ χρῆσις ἐ-
νόος δεδομένου τεμαχίου γῆς καθορί-
ζεται ὡς ἀποτέλεσμα τῆς ἀποστάσε-
ως αὐτοῦ ἀπὸ ἓν δεδομένον σημεῖον
καὶ τῶν τιμῶν εἰς τὸ σημεῖον αὐτό.

Ὁμοιοῦται ὡς αἱ ἀνωτέρω ἔ-
χουν ἐπισημανθῆ ἀπὸ τὸν Isaard
(1956) ἐνῶ ὁ Boventer (1962) ἔ-
χει ἐντοπίσει ἀναλογίας εἰς τὴν κα-
τανομὴν τῶν ἐμπορικῶν χρήσεων καὶ
τῶν χώρων διαμονῆς καὶ τῶν γεωρ-
γικῶν τοιούτων.

Παρ' ὅλα ἐν τούτοις τὰ ἀνωτέ-
ρω, μία σύγχρονος μεγάλη ἀστικὴ
περιοχὴ εἶναι ἓν πολὺπλοκο σύστη-
μα ἀποτελούμενον ἀπὸ σημαντι-
κῶς διαφόρους περιοχὰς διαμονῆς, ἀ-
ριθμὸν κέντρων ἐργασίας, ἀγοραστι-
κῶν κέντρων, περιοχῶν ἀναψυχῆς
κ.λ.π. ἐκάστου μὲ τὰς ἐξειδικευμένας
αὐτοῦ ἀνάγκας θέσεως. Ὅχηματα
καὶ δίκτυα συγκοινωνιῶν ἔχουν μειώ-
ση σημαντικῶς τὸ κόστος μεταφορᾶς
προϊόντων, καὶ ἔχουν παράσχει μίαν
ἄνευ προηγουμένου δυνατότητα πρὸς
τὰς διομηχανίας διὰ τὴν ἐπιλογήν
χώρου λειτουργίας, ἐνῶ ταυτοχρό-
νως ἔχουν περιορίσει τὴν ἀνάγκην
φυσικῆς γεινιάσεως ἀλληλοεξαρτω-
μένων διομηχανιῶν. Ὁ τριτογενῆς
τομεὺς παραγωγῆς ἔχει ὡσαύτως λά-
θει τεραστίαν ἀνάπτυξιν, ἡ δὲ σημα-
σία καὶ ὁ ρόλος αὐτοῦ εἰς τὰς συγ-
χρόνους πόλεις εἶναι ἄνευ προηγου-
μένου εἰς τὴν ἱστορίαν τῆς ἀνθρωπό-
τητος.

Ἐὰν ληφθοῦν ὑπ' ὄψιν αἱ ἀνω-
τέρω διαφοραὶ μεταξὺ τῆς σημερινῆς
πραγματικότητος εἰς μίαν σύγχρονον
ἀστικὴν περιοχὴν μὲ τὸ ἀπομωνωμέ-
νον πεδῖον τοῦ Von Thünen, ἡ σχε-
τικότης τῆς θεωρίας αὐτοῦ πρὸς τὴν
σύγχρονον πόλιν φαίνεται νὰ περιορί-
ζεται σημαντικῶς. Ἡ δυνατότης ἐ-
νόος χώρου διὰ λήψιν ἐνοικίου εἰς τὰς
πόλεις καθορίζεται καὶ ἐπηρεάζεται
σήμερον ἀπὸ τὴν ποιότητα τοῦ χώ-
ρου, τὰς διευθυντικὰς καὶ διαχειρι-
στικὰς ἱκανότητας τοῦ πιθανοῦ ἐκμε-
ταλλεοῦ τοῦ χώρου αὐτοῦ, τὴν θέ-
αν, τὴν προέκτασιν πρὸς δίκτυα ὑ-
δρεύσεως, ἤλεκτρισμοῦ, ἀποχετεύσε-
ως καὶ τηλεπικοινωνίας, τὴν ὑπαρξιν
καὶ τὴν μορφήν διαβάσεως, τὴν θέ-
σιν αὐτοῦ πρὸς ἄλλους χώρους καὶ
ἄλλας χρήσεις, πολεοδομικοὺς κανο-
νισμοὺς κλπ. Ὑπάρχει ὡσαύτως μία
ἔντονος διαφορὰ μεταξὺ τοῦ σχετικοῦ
δμοιομόρφου συνεχοῦς χαρακτῆρος
ἐνόος γεωργικοῦ χώρου καὶ τοῦ τεμα-
χισμένου, ἀσυνεχοῦς, πολυκέντρου
χαρακτῆρος τοῦ ἀστικοῦ χώρου. Ἐπὶ
πλέον, εἰς ἀστικὰς περιοχὰς τὰ χα-
ρακτηριστικὰ τοῦ φυσικοῦ καὶ ἀν-
θρωπίνου περιδάλλοντος δὲν κυμαί-
νονται ὑπὸ κανονικὸν τρόπον μὲ τὴν
ἀπόστασιν ἀπὸ ἓν συγκεκριμένον
κεντρικὸν σημεῖον ἀλλὰ λίαν ἀκανο-
νίστως.

Ἡ ἐλευθέρα ἀγορὰ εἰς τὰς πό-
λεις δὲν λειτουργεῖ ὑπὸ τὰς ἰδεώδεις
συνθήκας τοῦ Von Thünen. Κρατι-
κὸς παρεμβατισμὸς, συμμετοχὴ καὶ
ἐλεγχος εἰς θέματα τῶν πόλεων, ἀ-
γορὰ καὶ κράτησις γῆς διὰ σκοποὺς
κερδοσκοπίας, ἄνισος κατανομὴ τοῦ
εἰσοδήματος μὴ ἐπιτρέπουσα συναγω-
νισμὸν ἐπὶ ἴσοις ὄροις, καὶ ἀνεπαρ-
κεῖς δεῖκται τιμῶν, περιορίζουν ση-
μαντικῶς τὴν λειτουργικὴν ἀποτελε-
σματικότητα τῆς ἀγορᾶς. Τέλος, ἐ-
ταιρεῖαι ἐπενδύσεως εἶναι ἀρκετὰ ἐ-
λαστικαί εἰς τιμὰς ἐνοικίου γῆς, καὶ
ἐπὶ παραδείγματι δυνατόν νὰ προτι-
μήσουν χωρὸν προσφέρον ἓν σταθε-
ρῶτερον χαμηλότερον κέρδος ἀπὸ

χώρον με περισσότερας αλλά άσταθείς προοπτικές κέρδους.

Με τὰ άνωτέρω συντόμως άναφερθέντα γενικά χαρακτηριστικά μίας συγχρόνου πόλεως είναι έμφανές ότι ή προσέγγισις Von Thünen έχει περιορισμένης δυνατότητας επεξεγήσεως τής ύφισταμένης μορφής τής θέσεως μεμονωμένων διομηχανιών, κέντρων έργασίας ή χώρων διαμονής, παρέχουσα πολύ περιορισμένη αντίληψιν τών άλλαγών εις τήν δομήν τών οικισμών διά μέσου του χρόνου ή εις τó μέγεθος μίας πόλεως. Τó πρότυπον Von Thünen, υπό τήν άρχικώς προταθείσαν αύτου μορφήν είναι πιθανώς ένδεικτικόν, αλλά ούχι πολύ χρήσιμον εις τήν κατανόησιν τής δυναμικής τής άλλαγής και μεταβολής ήτις είναι πρωταρχικής σημασίας διά τήν κατανόησιν τής έσωτερικής δομής μίας πόλεως.

Λόγω τών ως άνω περιορισμών, έγινοντο κατά καιρούς προσπάθειαι διά τήν βελτίωσιν και τροποποίησιν τής θεωρίας Von Thünen και συσχετισμόν αύτης πρός τάς σημερινάς ανάγκας τής θεωρίας τής Άστικής Οικονομίας. Διάφορα πρότυπα άνεπτύχθησαν διά τήν επεξεγήσιν τής δομής και τών ένοικίων γής, βασιζόμενα ή/και τροποποιούντα τήν άρχικήν θεωρίαν (Alonso, 1964; Wingo, 1964; Muth, 1969). Αί πρότυποι αύται θεωρίαί, υπό μίαν γενικήν έννοιαν υποθέτουσιν μίαν κεντρικήν περιοχήν (τό αντίστοιχόν του άγροτικού κέντρου του Von Thünen) εις τήν όποίαν όλη ή παραγωγή και ή εργοδότησις λαμβάνει χώραν και μέσω τής όποίας όλαι αι εισαγωγαι και έξαγωγαι διακινούνται. Τό σύστημα θεωρεΐται ως λειτουργούν υπό μορφήν καθαρού συναγωνισμού, ή δέ κεντρική περιοχή ως τó πλέον εύπρόσιτον σημείον. Τά άτομα δέν δύνανται νά επηρεάσουν τάς τιμάς τής γής, και δέν ύφίστανται θεσμικαι έπιδράσεις επί τής άγοράς γής. Υπό τάς ως άνω υποθέσεις τó σύστη-

μα χρήσεως γής παρουσιάζεται υπό μορφήν όμοκέντρων ζωνών άποκλειστικής χρήσεως και μειουμένης έντατικότητας χρήσεως από τó κέντρον. Τά σημεία διατομής διαφόρων καμπυλών ένοικίου γής καθορίζουν σύνορα μεταξύ χρήσεων άντιπροσωπεύόντων τήν πλέον άριστον κατανομήν χρήσεως. Έτσι ή περιοχή του τριτογενοϋς τομέως ακολουθείται από μίαν διομηχανικήν ζώνην, μίαν ζώνην διαμονής και τέλος μίαν γεωργικήν ζώνην. Έκάστη τών άνωτέρω χρήσεων καταλαμβάνει κατ' άποκλειστικότητα τήν ζώνην αύτης, τά δέ ένοίκια τής γής πίπτουν συνεχώς με τήν άπόστασιν από του κέντρου τής πόλεως.

Η θεωρία του Von Thünen έχρησιμοποιήθη ώσαύτως από τήν σχολήν του Σικάγου (οικολογική μέθοδος), έρευνηται δέ έφήρμοσαν άνάλυσιν παρομοίαν του Von Thünen εις τήν μελέτην τών διαφόρων χρήσεων γής άστικών περιοχών. Έτσι αι όμοκέντροι ζώναι του Burgess (1925) παραλληλίζονται πρός αύτάς του Von Thünen. Ο Haig (1926) έφήρμοσε ώσαύτως τήν μέθοδον εις άστικές περιοχάς συσχετίζοντας τά ένοίκια τής γής πρός τó κόστος άποφυγής τής «προστριβής του χώρου» έν τή προσπάθειά έλαχιστοποιήσεως του «κόστους προστριβής» διά τάς διαφόρους χρήσεις.

Παρ' όλον έν τούτοις ότι-είναι πέραν πάσης άμφιβολίας ότι όλαι αι άνωτέρω προσεγγίσεις έχουν συνεισφέρει εις τάς προσπάθειάς κατανόσεως τών άστικών περιοχών, δεδομένων τών υποθέσεων επί τών όποίων έβασίσθησαν και τών διαφορών αύτών πρός τήν πραγματικότητα, έξακολουθοϋν νά παραμένουν ύπεραπλοποιήσεις του όλου συστήματος. Έτσι επί παραδείγματι οι Fales και Moses (1972) ήλεγξαν τήν θεωρίαν Von Thünen επί ύποδείγματος άντιπροσωπεύοντος τó Σικάγο του 19ου αιώνος. Τά άποτελέσματα έδει-

ξαν ότι πράγματι ή έντατικότητα εις την χρήςιν γής έμειοϋτο με την απόστασιν εκ του κέντρου. Έν τούτοις ή σημασία τής απόστάσεως ήτο μειωμένη και άλλα κέντρα με ύψηλήν πυραμίδα έντάσεως ένετοπισθησαν (Fales and Moses, 1972 : 55). Η βασική αίτία είναι ότι αι πόλεις δέν είναι πλέον μονοκεντρικαι αλλά χαρακτηρίζονται από άρκετους πόλους, με έκαστον πόλον καλύπτοντα την ιδιικήν του περιοχήν έπιρροής. Επίσης, ένω αναπτύσσεται και μεγαλώνει μιá πόλις, ή απόστασις από τó κέντρον άποκτά μειωμένην σημασίαν ώς καθοριστικός παράγων τών άξιών τής γής (Berry, 1970 : 299).

Μία περαιτέρω άρνητική επίδρασις επί τής θεωρίας είναι ότι ή ύπόθεσις αύτής για τά έξοδα μεταφοράς σημαίνει άκτινοειδή όμοιομορφίαν εις την έντατικότητα χρήσεως γής. Έάν επανέλθωμεν έν τούτοις εις την μελέτην τών Fales και Moses, εύρέθη ότι τά συγκοινωνιακά δίκτυα και ή φυσιογραφία προκαλοϋν σημαντικές διαφοροποιήσεις εις την άκτινωτήν όμοιομορφίαν. (Fales and Moses, 1972 : 57). Εύρέθη ώσαύτως ότι ή χρήςις γής τείνει να είναι άρκεούτως άνάμεικτος παρά άποκλειστική και ότι ύπήρχε έργοδότησις σημαντικής έκτάσεως σχεδόν εις όλους τούς τομείς τής πόλεως (Fales and Moses 1972 : 58). Τούτο άποτελεί σήμερα και τόν κανόνα εις όλας τás πόλεις.

Η εισαγωγή έπίσης έξωτερικών οικονομικών εις τó πρότυπον Von Thünen μεταθάλλει άκόμη περισσότερο την ύπ' αύτου παρεχομένην κατανομήν (Boventer, 1962 : 354). Τό πρότυπον άγνοεί τέλος την επίδρασιν τών οικονομικών κλίμακος τών διαφόρων άτομικών έπιχειρήσεων, τών οικονομικών άστικοποιήσεως (ελάττωσις κόστων λόγω ύψηλών πυκνοτήτων) ώς και τών δεσμών μεταξύ έπιχειρήσεων (ύποθέτει ότι τά ένδιάμεσα εισαγόμενα στοιχεία διακι-

νοϋνται άνευ κόστους).

Δύναται οϋτω να λεχθή ότι ή άνάλυσις Von Thünen παρέχει περιορισμένην έξήγησιν τής έν τῷ χώρῳ κατανομής τών δραστηριοτήτων εις άστικάς περιοχάς αι όποίαι έπαρουσίασαν την κυρίαν αύτων ανάπτυξιν εις τόν 20όν αιώνα, εις τás όποι-ας ó δευτερογενής και τριτογενής τομείς είναι διασκορπισμένοι και εις τás όποιας ó κεντρικός τομείς έπαυσε πλέον να άποτελή τó κέντρον έλξεως και άναφοράς όλων τών οικονομικών δραστηριοτήτων.

ΜΕΤΑΤΡΟΠΗ ΤΗΣ ΘΕΩΡΙΑΣ ΕΙΣ ΔΥΝΑΜΙΚΗΝ ΤΟΙΑΥΤΗΝ

Οί βασικοί περιορισμοί και μειο-νεκτήματα τής θεωρίας δια τήν άνάλυσιν μίας συγχρόνου πόλεως όφείλονται εις τás άφηρημένες αύτής ύποθέσεις και παραδοχάς ώς και εις την έννοιαν τής έξισορροπήσεως ήτις είναι ή βασική αύτής φιλοσοφία. Ο Isard άπέδειξε έν τούτοις ότι δια τής τροποποιήσεως τής άρχικής θεωρίας και τής παροχής περισσοτέρας εύκαμψίας εις τás άρχικάς παραδοχάς οϋτως ώστε να καταστή δυνατή ή εισαγωγή τών έννοιών τής έξειδικεύσεως έν τῷ χώρῳ και τής έναλλαγής μεταξύ φυσικώς διαφορετικών περιοχών αι όποίαι χαρακτηρίζονται από διάφορον έμπλουτισμόν εις φυσικούς πόρους, είναι δυνατόν να έχωμεν ώς άποτέλεσμα μιαν όλόκληρον συστοιχίαν προϊόντων και ύπηρεσιών (Isard, 1956 : 3—9). Ο Isard έδειξε ότι ή προσέγγισις Von Thünen δυνατόν να τροποποιηθῆ και γενικευθῆ οϋτως ώστε «να περιλάβῃ έν πλέον εύρύτερον και ρεαλιστικόν σύνολον καταστάσεων» (Isard, 1956 : 252), και υπό την έννοιαν ταύτην ύποδεικνύει ότι «ή θεωρία τής άστικής χρήσεως γής είναι λογική επέκτασις τής θεωρίας τής γεωργικής θέσεως» (Isard, 1956 : 200).

Όσον άφορά την έννοιαν τής

έξισορροπήσεως αὐτὴ δημιουργεῖ δυσχερείας εἰς τὴν ἐφαρμογὴν τῆς θεωρίας ἐντὸς ἐνὸς δυναμικῶς μεταβαλλομένου ἀστικῶ πλαισίου, ἢ δὲ μετατροπὴ ταύτης εἰς δυναμικὴν θὰ ἠδύνατο νὰ βελτιώσῃ τὴν χρησιμότητά της. Ὁ Isard, ἐπὶ τῆς ἐννοίας τῆς ἐξισορροπήσεως γράφει ὅτι «Αὐτὴ ἡ ἐννοία τῆς συναγωνιστικῆς ἐξισορροπήσεως εἰς τὴν χρῆσιν γῆς εἶναι τοῦλάχιστον μερικῶς ἀνασκευάσιμος... λόγῳ τῆς στατικῆς τῆς φύσεως». Ἡ κοινωνία εὐρίσκειται εἰς μίαν συνεχῆ κατάστασιν ἀσταθείας «...συνεχῶς ἀποσκοποῦσα εἰς μίαν κατάστασιν τελείας προσαρμογῆς ἀλλὰ καὶ συνεχῶς ἀποτρεπομένη ἀπὸ τὴν πόρεϊαν τῆς αὐτῆν ἀπὸ τὰς δυνάμεις ἀλλαγῆς» (Isard, 1956 : 3). Ἐπὶ τοῦ ἰδίου θέματος ὁ Alonso ἀναφέρει ὅτι «...παρ' ὅλον ὅτι ἡ κλάσσικὴ θεωρία εἶναι ἱκανοποιητικὴ εἰς τὴν περιγραφὴν τῆς ἀτομικῆς ἐξισορροπήσεως, δὲν μᾶς ἐπιτρέπει εἰς τὴν περιπτῶσιν αὐτῆν [ἐπιλογὴ θέσεως κατοικίας] ... νὰ φθάσωμεν εἰς μίαν ἐπεξήγησιν τοῦ συνόλου τῆς ἀγορᾶς ἀνευ δραστηρικῆς διαφοροποιήσεως [τῆς θεωρίας]».

Ἡ ἐννοία αὐτὴ τῆς ἐξισορροπήσεως χρειάζεται τροποποίησιν διὰ βελτιώσῃ τῆς χρησιμότητος τῆς θεωρίας, δεδομένου ὅτι εἰς τὴν πράξιν ἡ οἰκονομία οὐδέποτε ἐπιτυγχάνει τοιαύτην κατάστασιν. Ὑπάρχουν πάντοτε ἀλλαγαι καὶ ἡ διαδικασία προσαρμογῆς εἶναι συνεχῆς. Οἰκονομικὰ καὶ κοινωνικὰ φαινόμενα εἶναι δυναμικὰ, ἢ δὲ ἀλλαγὴ δὲν δύναται νὰ ἐπεξηγηθῇ ὡς κατάστασις ἰσορροπίας.

Ἡ ἐννοία τῆς ἐξισορροπήσεως, τῆς θεωρίας τοῦ Von Thönen ἀναφέρεται εἰς μίαν κατάστασιν ἰσοζυγίου, ἐν στατικὸν σημεῖον πρὸς τὸ ὁποῖον τὸ ὅλον σύστημα θὰ τείνῃ νὰ φθάσῃ, ἐὰν δὲν ὑπεισέλθουν παρενοχλήσεις εἰς αὐτό, μὲ τελικὸ ἀποτέλεσμα τῆς παραδοχῆς ταύτης ἐν στατικὸν σύστημα μὴ προσφερόμενον πρὸς

τὰς ἀνάγκας τῆς ἀναλύσεως μεταμορφώσεων εἰς χωροταξικὰς κατανομάς. Εἰς τὴν τελείαν κατάστασιν, ἐκείνην τὴν εὐρίσκομένην εἰς πλήρη ἰσορροπίαν, ἕκαστον τεμάχιον γῆς θὰ ἦτο κατελιγμένον ἀπὸ τὴν ὑψηλότεραν καὶ καλυτέραν χρῆσιν καὶ τὰ ἔξοδα μεταφορᾶς περιωρισμένα εἰς τὸ ἐλάχιστον. Ἡ ἐξάρτησις αὐτῆ τῆς θεωρίας ἀπὸ ὅτι εἰς τὴν πραγματικότητά εἶναι ἐπεξήγησις θασίζομένη ἐπὶ ἐνὸς μόνον παράγοντος ὑπὸ ὑποθετικῶς σταθερᾶς συνθήκας ἐλαττώνει τὴν πρακτικὴν χρησιμότητά της. Θεωρητικῶς ἡ ἐννοία τῆς ἰσορροπίας τοῦ συστήματος χρησιμεύει φυσικὰ διότι ἐπιτρέπει τὸν περιορισμὸν τῆς ἀναλύσεως καὶ συγκέντρωσιν εἰς τὴν ἐξέτασιν ἐνὸς ἢ μερικῶν ἐπιλεγομένων σχέσεων αἵτινες δύνανται νὰ ἀναλυθοῦν μὲ μεγαλύτεραν προσοχὴν καὶ εἰς μεγαλύτερον ὅθος, θεωρουμένων τῶν λοιπῶν στοιχείων ὡς δεδομένων.

Ἐν τούτοις ἐὰν κανεὶς προσπαθῆσῃ νὰ ἐπεκταθῇ ἐπὶ τῶν ἀπόψεων τῶν Isard καὶ Alonso ἐπὶ τοῦ στοιχείου τῆς δυναμικότητος, μία ἐπεξήγησις τῶν ἀποφάσεων διὰ τὴν ἐν τῷ χώρῳ θέσιν δραστηριοτήτων θασίζομένη ἐπὶ τῆς ἐννοίας τῆς ἐξισορροπήσεως δὲν λαμβάνει ὑπ' ὄψιν τὸ στοιχεῖον τοῦ χρόνου ὡς οὗτος ἐπηρεάζει τὰς ἀποφάσεις αὐτάς. Ἐν ἀστικὸν σύστημα δὲν δύναται νὰ φθάσῃ εἰς τὸ σημεῖον τῆς ἰσορροπίας τὸ ὁποῖον συνεχῶς μετατίθεται, ἢ δὲ ἀλλαγὴ εἰς τὴν θέσιν, διανομὴν καὶ ἔντασιν χρήσεως ὅλων τῶν ἀστικῶν δραστηριοτήτων εἶναι συνεχῆς. Αἱ ἐσωτερικαὶ διευθετήσεις τοῦ συστήματος ὡς αὐταὶ ρυθμίζονται ἀπὸ τὴν τεχνολογίαν, τὴν συμπεριφορὰν διακινήσεως καὶ ἄλλους παράγοντας δὲν παραμένουν στάσιμοι, ἢ δὲ ἐσωτερικὴ δομὴ τῆς πόλεως εὐρίσκειται ὑπὸ συνεχῆ μεταβολῆν. Τὸ σχετικὸν πλεονέκτημα μᾶς περιοχῆς δὲν εἶναι μία στατικὴ κατάστασις εἰς τὴν ὅποιαν μερικαὶ περιοχαὶ προορίζονται διὰ συγκεκριμένους χρήσεις οὔτε καὶ ἡ ἐπι-

τυχημένη των χρησιμοποίησις εἰς τὸ διηγεκὲς διὰ τοιοῦτους σκοποὺς εἶναι ἐξασφαλισμένη. «Δυναμικῶς, δὲν ὑπάρχει ἡ καλύτερα θέσις, διότι δὲν γνωρίζουμε τὸ μέλλον» (Lösch, ὡς ἀναφέρεται εἰς Smith, 1966 : 93) .

Εἶναι ἀκριδῶς τὸ στοιχεῖον αὐτὸ τοῦ δυναμισμού τὸ ὁποῖον καθίσταται ἀπαραίτητον ὅπως εἰσαχθῆ εἰς τὴν θεωρίαν. Δὲν καθίσταται δυνατὸς ὁ ἐντοπισμὸς μίας θέσεως ἥτις θὰ ἐλαχιστοποιοῦσε τὸ συνολικὸν μεταφορικὸν κόστος καὶ θὰ μεγιστοποιοῦσε τὰ μακροπρόθεσμα κέρδη εἰς ἕν λογικὸν βαθμὸν βεβαιότητος, διότι τὰ χαρακτηριστικὰ κόστους καὶ εἰσοδήματος μίας θέσεως μεταβάλλονται διὰ τοῦ χρόνου, μεταβαλλομένης οὕτω καὶ τῆς ὑψηλωτέρας καὶ καλύτερας χρήσεως διὰ τὴν θέσιν ταύτην. Τοιαῦται ἀλλαγὰι ὀφείλονται εἰς ἀλλαγὰς εἰς τὴν γῆν ὡς πόρον, εἰς τὴν κατὰστασιν ζητήσεως, τὴν τεχνολογίαν κλπ. καὶ ἐπηρεάζονται εἰς μεγάλον βαθμὸν ἀπὸ πολεοδομικοὺς κανονισμοὺς καὶ ἄλλας κυβερνητικὰς ἀποφάσεις.

ΠΕΡΙΛΗΨΙΣ

Ἡ θεωρία τοῦ Von Thünen ἀπετέλεσε πρωτοποριακὴν ἐργασίαν εἰς τὸν τομέα τῆς ἐπεξηγήσεως τῆς

διαδικασίας λήψεως ἀποφάσεων διὰ τὴν χρῆσιν τῆς γεωργικῆς γῆς. Ἡ ἐπεξηγήσις προτύπων κατανομῆς χρήσεως γῆς εἰς ἀστικὰς περιοχὰς ὡς αὗται εὐρίσκονται εἰς τὴν πραγματικότητα προϋποθέτει κατανόησιν τῆς ἐξελικτικῆς διαδικασίας τῶν ἀστικῶν περιοχῶν, ἡ δὲ θεωρία τοῦ Von Thünen χρειάζεται μετατροπὴν διὰ νὰ δυνηθῆ νὰ ἐπεξηγήσῃ τὰ ἀποτελέσματα τῆς διαδικασίας ἀλλαγῆς. Αἱ δυναμικὰ οἰκονομικὰ, τεχνολογικὰ καὶ θεσμικὰ ἀλλαγὰι τοῦ 20οῦ αἰῶνος χρειάζεται ὅπως ληφθοῦν ὑπ' ὄψιν διὰ νὰ παρακαμφθῆ τὸ ὑφιστάμενον εἰς τὴν θεωρίαν στατικὸ πλαίσιο τῆς ἰσορροπίας, ἀναγνωριζομένου οὕτω ὅτι ἡ ἀστικοποίησις εἶναι μία συνεχῆ διαδικασία καὶ ὅτι αἱ πόλεις γεννῶνται, μεγαλώνουν, πολλαπλασιάζονται, μαραινόνται καὶ πίπτουν. Μόνον ἐντὸς ἐνός τοιοῦτου γενικοῦ δυναμικοῦ πλαισίου δυνατὸν νὰ καταστῆ δυνατὴ ἡ παροχὴ ὠρισμένων ἐξηγήσεων διὰ τὸν πολεοδομικὸν καὶ χωροταξικὸν προγραμματισμὸν διὰ τῆς κατανοήσεως τουλάχιστον μερικῶς μεταβολῶν εἰς τὴν χρῆσιν γῆς αἰτινες δυνατόν εἰς τὸ μέλλον νὰ ὑπάρξουν ὡς ἄμεσος ἀνταπόκρισις εἰς ἀλλαγὰς εἰς τὴν ζήτησιν διὰ διάφορα προϊόντα καὶ ὑπηρεσίας, εἰς τὴν τεχνολογίαν, καὶ τὴν συγκοινωνίαν.

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EXCLUSIONARY ZONING IN THE U.S.A. AND ITS URBAN CONSEQUENCES

NICOS ROSSIDES

INTRODUCTION

The use of zoning codes to exclude undesired residents from a given municipality on the basis of racial and economic criteria is flourishing today in America in spite of the widespread efforts to fight such practices.

The consequences of discriminatory laws are clear in larger lot requirements, prohibition of multi-family units and minimum floor area standards, which in turn inflate land and construction costs, have made development of low and moderate income housing uneconomical for the builder and raise rent and purchase price beyond the means of the lower and middle-class worker. This very effectively locks specific economic groups into the cities. The close correlation that exists between the lower income levels with racial and ethnic minorities explains the increasingly non-white character of the central cities, and housing in the city centers as a result is rapidly becoming substandard. Therefore, through the use of discriminatory zoning, nationwide economic and social segregation of residential opportunities has developed.

Suburban politicians are dependent upon the electorate and therefore are tied to suburban attitudes. Municipal governments attempt to protect real estate values, on which property taxes are based, by limiting the construction of low and moderate income housing. The courts, by upholding the presumption of statutory validity, further aid these exclusionary attitudes. Taken together, all these forces have to be considered very seriously by today's decision-makers and planners.

General Background

Zoning laws were not originally popular and the courts in the early 1900's upheld the individual's right to the unobstructed use of his property. Significant restrictions upon rights in private property were not favored in a country which was strongly committed to laissez-faire economic and social philosophy. Strong arguments favoring such restrictions were not easily found because urban problems of the nature that we face today were not an important issue. In addition most of the population lived in rural areas and land was plentiful near urban areas. As the cities developed however, it became obvious that failure to regulate overcrowding of buildings and incompatible or unwanted uses

would cause grave problems and thus cities formed zoning laws permitting the regulation of nuisances.¹

The power to zone was constitutionally established by the landmark *Village of Euclid v. Ambler Realty Company* case in 1926. Prior to that, zoning codes were usually upheld as a valid function of the state's police power on the theory that they were designed to regulate nuisances. However, in *Euclid v. Ambler* the Supreme Court of the United States ruled that the municipality had the right to enact a comprehensive zoning plan and to exclude certain uses even though the use in question was not in itself a nuisance. The Court used "reasonableness" as the test.²

The Legal Nature of Zoning

Municipalities obtain their power to zone from the state legislature. They have to show that the zoning ordinance not only meets Constitutional standards but also meets the legislative requirements that are enumerated in the State Enabling Act. The procedure is different with some "home rule" cities in which case the state constitutions sometimes empower cities to adopt so called home-rule charters. Under this permission the voters may include broad powers in the charter giving the local legislative body the authority to pass regulations based on police power.³

The characteristic that distinguished the zoning ordinance from most other regulations is that it differs from municipality to municipality within the same region. This characteristic carries with it the danger that local legislative bodies will adopt zoning practices that are beneficial or desirable for the municipality but indirectly affect adversely other regions. Despite restrictions on local zoning power imposed by the legislature in the zoning enabling acts and the courts, numerous municipalities have used zoning to exclude certain socio-economic or racial groups from their communities.⁴

Exclusionary Abuses of Zoning

Zoning is clearly used in many instances for economic and racial discrimination mainly promoted by the zoning practices of the suburban governments. Decisions concerning local needs are often contrary to the overall public interest of the region and create tremendous problems for the city. Blacks and the poor are often trapped in ghettos inside the city because zoning restrictions in most suburbs make it impossible for them to find better conditions. The New York Regional Planning Association has estimated that a family with an annual income of less

than \$15,000 cannot afford to live in the suburbs of N.Y. City, yet 90% of New York residents are in this category. Furthermore new job openings in the N.Y. City Metropolitan area show a 7:1 ratio in favor of the suburbs.⁵

The persistence of discriminatory zoning is mostly due to its implicit nature. The conversion of zoning from a regulatory tool to a discriminatory one required the shift from open discrimination to more subtle means of regulation and restriction. Obvious discrimination has been consistently overruled in the U.S. Courts. The U.S. Supreme Court in *Buchanan v. Worley* invalidated an ordinance of Louisville, Kentucky, which made it unlawful for a Negro to move into a house in a city block where the majority of residents were White.⁶ Similar holdings of courts were made on the state level whenever racially exclusive zoning ordinances were direct and were identified as such. To get around these judicial attitudes, local governments have been excluding unwanted residents with more subtle regulations, eg. minimum lot requirements, minimum floor areas for housing, and prohibition of multi-family units. The prohibition or limitation of multi-family housing found the support of the courts due to the argument of density control which was one of many purposes of the Standard State Zoning Enabling Act. Similarly, minimum lot area regulations were upheld on the basis of control of adequate amounts of air and light.⁷

A very good recent example of an exclusionary zoning dispute was that in Black Jack, Missouri, an unincorporated community about 15 miles south of St. Louis. In 1969 a religious organization purchased 11.9 acres of land for construction of low income housing units in the Black Jack community. The development known as Park View Heights was to be financed through FHA insured loans. However, several citizens organized to oppose this "intrusion" into their community. The Black Jack Improvement Association was formed to warn the citizens of the imminent dangers with the result that Black Jack was incorporated and the zoning ordinance was immediately revised. Local land which was previously zoned for multiple dwellings was rezoned to permit only single family dwellings.⁸ A lawsuit filed by Park View Heights and later by the Justice Department was dismissed by District Judge James H. Meredith who ruled that the ordinance had no discriminatory effect. On December 27, 1974, however, the Court of Appeals for the Eighth Circuit reversed the dismissal of the lawsuit, declaring that the ordinance for banning apartment complexes was discriminatory and invalid.⁹ In their reversal the judges said that Black Jack's ordinance was "but one more factor confining blacks to low income housing in the central city confirming the inexorable process whereby the St. Louis metropolitan

area becomes one that has the racial shape of a doughnut, with the Negroes in the hole and mostly whites occupying the ring".¹⁰ In June, 1975 the U.S. Supreme Court refused to review the decision which was appealed by the attorneys representing Black Jack.¹¹

In January, 1975 however, the non-profit corporation which originally sought a court order to allow the development filed instead for \$2,000,000 in damages. This would represent the increased cost of construction between the Spring of 1971 when construction was originally scheduled and February 1, 1976. In addition, the Resident of the Park View Heights Corporation announced on January 13 that the group had abandoned its plan to build the racially integrated 200-unit apartment complex. The argument was that the project was no longer feasible because of increased construction costs, the sharp rise in interest rates and the virtual elimination of the federal program under which the project was to have been built. These developments prompted an out-of court settlement of \$450,000 which Black Jack agreed to pay the nonprofit group. U.S. District Judge Roy Harper signed an order on January 12 giving the community until May 10 to raise the money.¹²

On February 17 the Black Jack voters approved by a 98.8% majority (1,541 voters in favor and 18 opposed) a \$450,000 bond issue to purchase the 11.9 acre site. This eventually gave the title of the land to Black Jack and effectively killed the project.¹³

Despite the final outcome, the Black Jack case demonstrates quite convincingly that Courts are becoming more aware of implicit discriminatory practices and are willing to rule against zoning ordinances on the grounds that they are discriminatory.

Recently courts particularly in Pennsylvania, New Jersey and Michigan are taking a position against exclusionary practices, taking into consideration the social and economic composition of a regulated community. For example the Pennsylvania Supreme Court (1965 & 1970) rejected zoning ordinances which provided for four acre and three acre minimum lot size requirements. It was decided that this was an arbitrary and unreasonable use of the zoning power and that it was in violation of the fifth and fourteenth amendments.¹⁴

One of the more widely used legal objections to exclusionary zoning is that it results in a denial of equal protection. Ultimate determination of unconstitutionality depends on whether "old" or "new" equal protection standards are applied. Under the "old" equal protection standard review state must show only a **rational** basis for the classification. However, if the plaintiff can establish that the ordinance creates a suspect classification or affects a fundamental interest, then "new" equal protection standards of review will apply. This new standard

requires that the state show a **compelling interest** to sustain its classification.¹⁵

In addition to traditional constitutional restrictions (arbitrary, capricious or unreasonable regulations) courts have begun to focus in some cases on the constitutionally protected right to travel, as a limitation upon the use of zoning laws to control municipal population growth. For example, a federal district court in California held that a municipal ordinance intended to safeguard the community's character by keeping out newcomers, restricted the right to travel. The ordinance among other things, limited new construction to 500 houses per year and thus prevented the influx of new residents.¹⁶

However, even though judicial attitudes are gradually changing, implicit discrimination in the form of exclusionary zoning practices, is still very prevalent throughout the U.S. Even in some of the above mentioned, more progressive states like Pennsylvania and New Jersey, to say nothing of other more conservative states, there are numerous examples of rulings in favor of exclusionary zoning ordinances. In New Jersey for example, a minimum lot size requirement of five acres was sustained on the grounds that it was an appropriate method of preserving the character of the community (*Fischer v. Township of Bedminster*). Also, a minimum floor space requirement in the case of *Lionshead Lake, Inc. v. Township of Wayne* was upheld as a reasonable exercise of the zoning power, while a prohibition of mobile home use was upheld on the basis of aesthetic considerations. The Supreme Court itself has approved as a legitimate device of participatory democracy, a state constitutional provision requiring prior referendum approval for construction of subsidized housing.¹⁷

The Self-sustaining nature of racial and economic exclusionary zoning.

Discriminatory zoning is in most cases self-sustaining. The suburbanite is most often one that escapes from the inner city and who wants to preserve the advantages of suburban life, such as low crime rates, better schools, racial homogeneity and single family house ownership. He fears the possibility of the construction of apartment complexes and high density housing projects since he considers these identical with rent control, rising taxes, operating and maintenance costs and local apathy. This attitude although contrary to the principles of mobility and economic opportunity which permitted him to leave the city originally is unfortunately very real today. Living in an exclusive neighborhood is a strong status consideration that is defended with great fanaticism.¹⁸

In addition to the suburban status consideration, exclusionary zoning is self sustaining, due to the political and economic rewards it brings with it. It is evident that under the present zoning system which gives power to municipalities to determine regulations, the decisions made will be to the advantage of the municipality even if that does not often mean advantage to the region as a whole. Also, local politicians who make these regulations are local people responsive to local wants and desires. Therefore, they have to follow a policy of exclusion. To do otherwise would be political suicide since they are locally elected.¹⁹

Economic discrimination is rewarding since public services and school financing are handled by municipal governments. Therefore, non-residential development and expensive housing bring about higher taxation, with a minimum burden on public services. Along with the tax revenue consideration, carrying out large-scale middle-income housing projects is accompanied by the need to expand schools, roads, hospital facilities, police and fire departments, recreational facilities and other municipal services. Therefore, exclusionary zoning by suburban communities simply passes the burden onto the cities.

The conflicting interests of the municipalities and the total metropolitan area are summarized very vividly by Daniel P. Moynihan: "For better than half a century now, city governments with the encouragement of state and federal authorities have been seeking to direct urban investment and development in accordance with principles embodied in zoning codes and not infrequently in accord with precise city plans. However, during this same time the tax laws have provided the utmost incentive to pursue just the opposite objectives of those incorporated in the codes and plans. Government has, in fact, established two sets of purposes and provided vastly greater inducements to pursue the implicit, rather than the avowed ones".²⁰

Urban Consequences

Suburban zoning has given rise to a city-suburban polarization with the poor and the blacks restricted to high-density central-city housing. This condition has had vitally important implications, producing segregation in schools which follows residential segregation. It is also a contributing factor in generating the wind of racial unrest that exploded in Watts, Hough, Newark and Detroit.²¹

The influx of low-income families to the central metropolitan areas is counterbalanced by an equally heavy flow of middle and upper-income families from these central areas to the suburbs. This exodus to the periphery is placing an enormous strain on the central city, which still

remains the social, economic and cultural center but is no longer the region's economic growth center. The city must provide transportation facilities, police and fire protection, water, sewage and numerous other services to its environs every day. Under the present system however, the city is unable to extract the proper compensation from all those that use its facilities.²² The replacement of higher income families with low income families means that a financial loss replaces a financial asset. This shrinks the revenues due to the decreasing property values and while the suburbanite is no longer a contributor he's still a user of the facilities provided. On the other hand, the person of lower income in the city needs greater outlays of social welfare and education.²³ If present trends continue by 1985, 65% of the American SMSA's population will reside in the suburban ring, an increase from 48% in 1960. This occurrence will, of course, further increase the strain on the central city. Also, present trends indicate that central cities will continue to become non-white enclaves, surrounded by white suburbia. At the current rate of suburban migration St. Louis is estimated to be over 50% Black by 1978. In 1950 the population of St. Louis was only 18% Black.²⁴

The class division between rich and poor is proceeding along somewhat different lines, and is less pronounced. Even though there are millions of poor suburbanites there is a continued exclusion of almost all low and moderate income households from "suburban new-growth" areas. Therefore, they show strong concentration in the older suburbs and the central city areas.²⁵ Despite these variations among different suburban areas, Schnore concluded in his research of social class segregation, that income levels tend to increase as one moves toward the urban fringe.²⁶ The poor begin to cluster together in the older parts of large cities because the obsolete and deteriorating housing there, is relatively inexpensive. The resulting spatial concentration of poverty is reinforced for many minority groups by racial and ethnic segregation.

According to Urban Economist Anthony Downs, the concentration of poverty thus generated contains two different types of poor households: the "mainstream poor", and the "left-out poor". The so-called mainstream poor believe they are capable of escaping soon. Their behavior is almost the same as middle-class behavior, except they lack money. The left-out poor, who believe that they can no longer escape from poverty in the foreseeable future, may shift to adaptive behavior that is different from middle-class behavior and often is negative regarding the social system, the law and generally society itself. This often creates a negative spillover effect upon surrounding households.²⁷ These negative spillover effects cause many of the middle income households remaining in these

areas to move elsewhere and encourages many mainstream poor to leave as soon as they raise their incomes. Also, many private firms that provide jobs for local residents are induced to move out to avoid vandalism and increasing difficulties in recruiting a satisfactory labor force. Retail firms serving the area decrease in number as total spending falls, further cutting available jobs. Thus, a vicious circle of poverty and despair is generated in many central city areas, compounded by the fact that poor people being less organized and the least capable of mobilizing their own resources, are less successful in gaining assistance through political channels than residents of more affluent areas.²⁸

Exclusionary zoning and the housing problem

Exclusionary zoning laws adversely affect the U.S. housing situation. Zoning restrictions and local referenda have served to make difficult the orderly expansion of the housing supply and thus, to hinder the access of certain income or racial groups to housing and jobs.²⁹

As we head for the end of the 1970's many people realize that the prospect of finding adequate housing at affordable prices is quickly diminishing, partly due to a lack of a comprehensive effort to tackle the problem in a systematic and planned way. At the present rate of 27,000 new households every week, it is estimated that in the next 25 years, upwards of 50 million people must be accommodated.³⁰

The pressures of demand versus limited supply would tend to predict a great rise in construction with a loosening of localized building restrictions (building codes, zoning laws, etc.) as well as the availability of a ready supply of money and credit. But the dilemma comes when we realize that the opposite is the case. Housing starts have plunged from a peak rate of 2.5 million units in October, 1972, to a 1.1 million figure in 1974.³¹ Studies show that the nation must build about 28 million units during this decade to avoid a serious shortage.³²

Many public policy makers seem to encourage by their actions a "decay containment" strategy, which involves trying to confine conditions in crisis ghettos to as small an area as possible. However, a housing shortage severe enough to contain low-income households within crisis ghettos would greatly aggravate tensions in adjacent areas. Low-income households trying to escape crisis ghetto environments would be putting even more pressure on middle-income neighboring areas.³³ Decay containment could be made effective only if accompanied by deliberate dispersal of these out-migrating households throughout the metropolitan area which is made unlikely by current municipal zoning laws.³⁴

The Need for Reform

A metropolitan reorganization seems to be badly needed to eliminate the self-defeating contradictions which characterize metropolitan governance today. Proposed solutions range from an outright elimination of zoning to zoning reforms at the local and regional level.

Bernard Siegan in a 1972 study, advocates the absolute suspension of zoning on the grounds that it is a useless and inappropriate practice which leads to residential exclusion, curtailed urban development, reduced competition and loss of marketplace freedoms. He bases his argument on the Houston, Texas experience where there is no zoning.³⁵

However, one of the arguments against the outright elimination of zoning is that it would remove the only effective measure local governments now have over negative externalities or spillovers. Examples of incompatibilities could be effects accompanying certain industrial and commercial enterprises like smoke, fumes, noise and traffic.³⁶ In addition there is no assurance that exclusion would cease since it could continue in the form of restrictive covenants and subdivision regulations.

Reform of zoning practices is a more popular alternative, and has been recommended by two major presidential commissions on urban housing and urban problems.³⁷ At the Federal level one of the recommendations has been the formulation of a uniform national land-use policy as a "backdrop" for state and local actions. Also it has been recommended that Congress should adopt incentives in legislation by attacking housing-related preconditions for the allocation of federal urban development funds. Some of these preconditions would specifically include (1) providing housing opportunities for all, particularly low and moderate income families (2) providing greater access to places of employment (3) providing housing in conjunction with improved community facilities.³⁸

Also, the municipal power to zone is normally based on state enabling action, one solution would simply be to change the underlying purposes of such enabling laws. For example in 1969 New Jersey's Governor Richard Hughes proposed a bill designed to alter the premises upon which the power to zone is based. The proposed Land Use Law broadened the objectives of municipal zoning to include provisions for equal housing opportunities.³⁹

The need for regional planning guidelines has also been emphasized in current literature concerning zoning reform. A region-wide framework for zoning decisions is advocated, where a regional policy for locating housing, jobs, schools, open space, and other uses of land, would replace the fragmented decision making process that is now followed. The

land would possibly be inventoried by region and each region would in turn develop a land allocation scheme to implement the states' policies. This regional plan would be the framework for regional decisions as well as a framework for courts to which challenges are taken.⁴⁰

The framework for part of such a system already exists in New York state. The "New York State Office Planning Coordination-Map of Regions" divides the state into 13 regions by geographical and demographic lines. The Plan is a design for the state as a whole and not for the regions individually, and is intended to provide guidelines for planning groups.⁴¹

The design of a regional remedy necessitates a specific definition of what a region would be. The appropriate region could be either a county or multi-county area utilizing existing administrative boundaries, and planning units (county planning commissions). Another possible regional entity is the Metropolitan Statistical Area (SMSA), defined as "a county or a group of contiguous counties which contain at least one city of 50,000 people, including, in certain cases, contiguous counties which, according to certain criteria, are socially and economically integrated with the central city". According to the Federal Office of Management and Budget, approximately 250 SMSA's are recognized in the 1970 census. Another possibility would be the use of housing market areas: HUD defines "housing market areas" throughout the country for which it undertakes market analyses every two years. These areas, which represent coherent markets in which there is a certain amount of mobility and identity of available housing, could easily be used as regional units for planning purposes.⁴²

Conclusion

The absence of any type of coordination between the decision-making units of the metropolis prevents the entire region from realizing the benefits of a coherent policy. Reform is made difficult in view of the fact that local control and home rule are basic concepts in the American way of life. However, when individual communities fail to respond to the needs of the general public, solutions should be sought at a higher level through regional land-use laws. Only through a regional context can the obligations of a single community be established, so as to benefit the entire metropolitan area.

A reformed decision-making structure would improve the condition of low and moderate income families by enabling them to escape from crisis ghetto conditions and would open up suburban job opportunities to these lower classes. Such developments would hopefully reduce class and racial segregation, thus decreasing the magnitude and necessity for serious political cleavages.

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A COMPARISON OF TWO RIVER BASINS, THE LIMNITIS AND EVDHIMOU, USING THE WATER BALANCE AND DRAINAGE BASIN MORPHOMETRIC TECHNIQUES

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INTRODUCTION

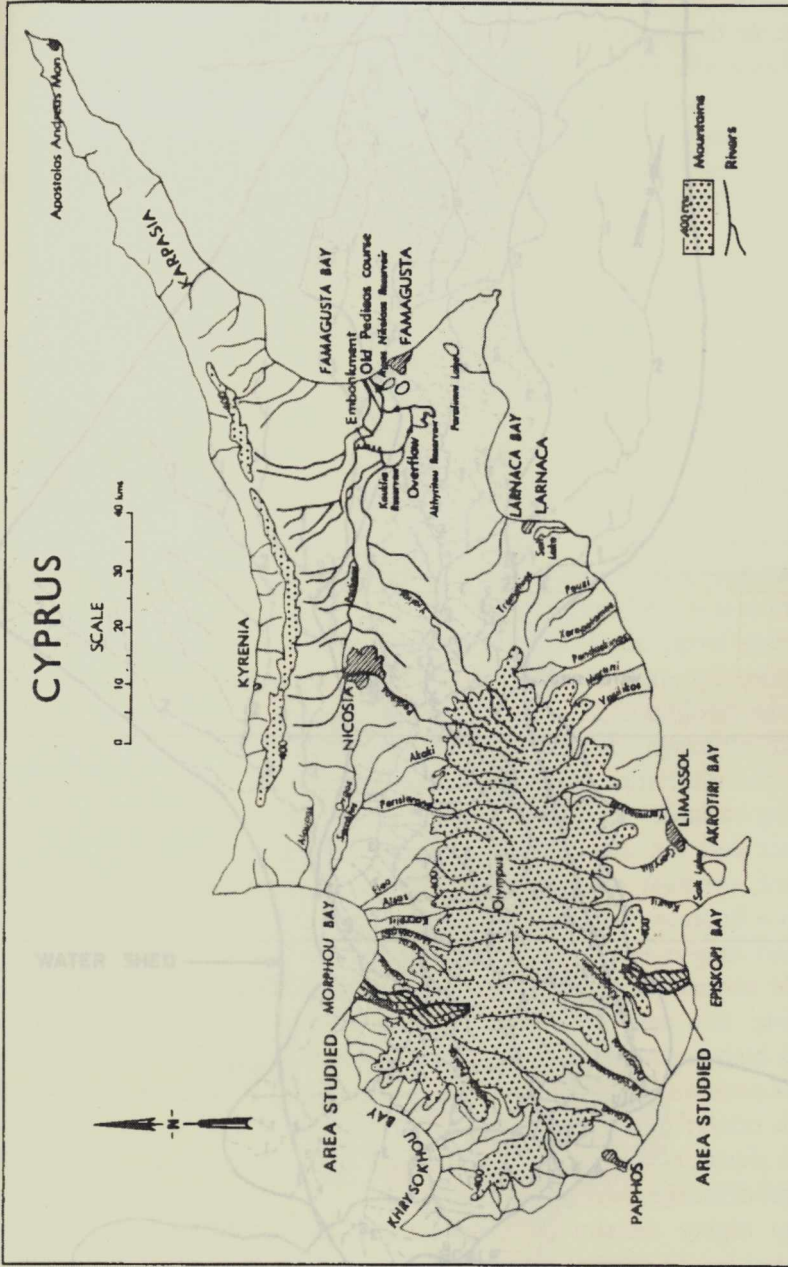
We have chosen to compare two river basins, that of the Limnitis and the Evdhimou. The reason for choosing these two is mainly that one is on an igneous, highly dissected surface while the other is upon the gentle dip slope of the Pakhna sandstone, chalk and marl cuesta. Map 1 shows the locations of the two basins. Various statistical methods were employed in what is described as a quantitative analysis. In relation to the water balance, various static and dynamic variables are used as the basis for analysis and the statistics will be employed to illustrate the application of these variables to our comparisons. For the measurement of the morphometric variables such as basin area, drainage density, stream frequency and gradient we have used the 1:50,000 topographical maps which also provided us with evidence regarding natural vegetation and land use, while for the geology of the basins we have used the geological map of Cyprus.

We wanted ideally to compare a high and a low density basin as this would give us widely differing patterns; however, a really fine textured basin cannot be studied from maps of this scale which are the only ones available. The two differ enough, however, in that the Limnitis has a relatively dense network as compared to the Evdhimou.

MORPHOMETRIC ANALYSIS

The first step in morphometric analysis of river basins is the application of the 'order designation' technique. Strahler's method was used and the ranking of the two stream nets is shown in Fig. 2 (a) and (b). This analysis has revealed that the trunk stream of the Limnitis basin is a stream of the 5th order while that of the Evdhimou basin is of the 4th order. Since the drainage basin itself is designated after the highest order stream it contains, the Limnitis basin is referred to as a 5th order basin and the Evdhimou as a 4th order one. It must be remembered, however, that the scale of the maps we have used is rather small and if larger scale maps were available depicting smaller streams than those on our maps both stream orders and drainage density would have had higher values.

Both basins have dendritic stream patterns, though only the Evdhimou is a true dendritic, where the tributaries meet at acute angles. The Limnitis has a kind of elongated semidendritic pattern in which the major tributaries meet the trunk stream at fairly acute angles but a



By courtesy of the Cyprus Geographical Association

MAP 1: LOCATION OF THE LIMNITIS AND EVDHIMOU DRAINAGE BASINS

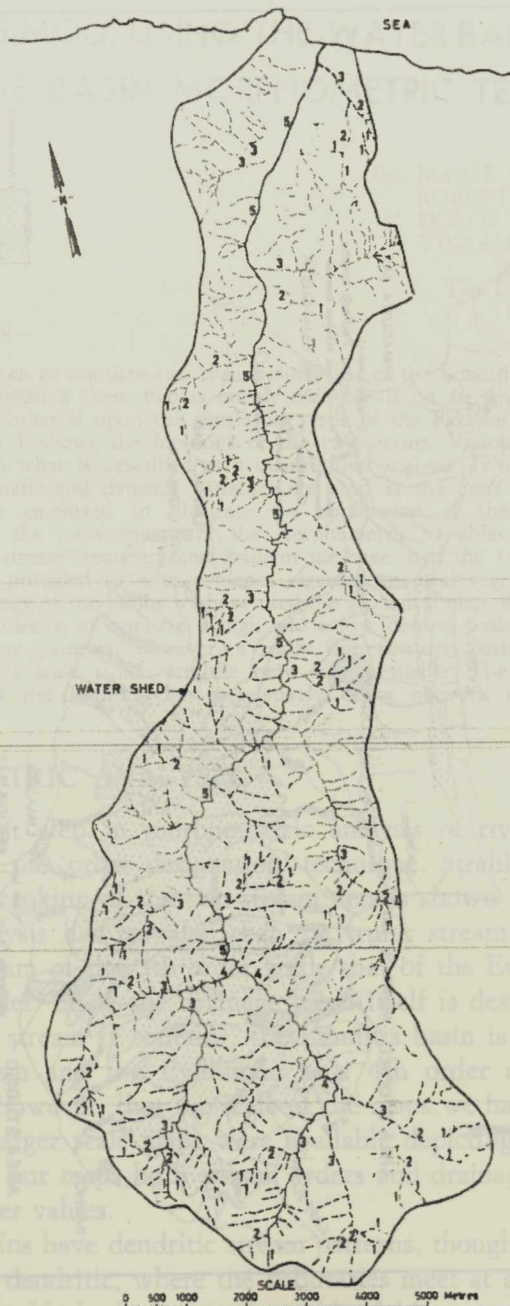


FIG 2(a) STREAM ORDERS OF LIMNITIS RIVER BASIN

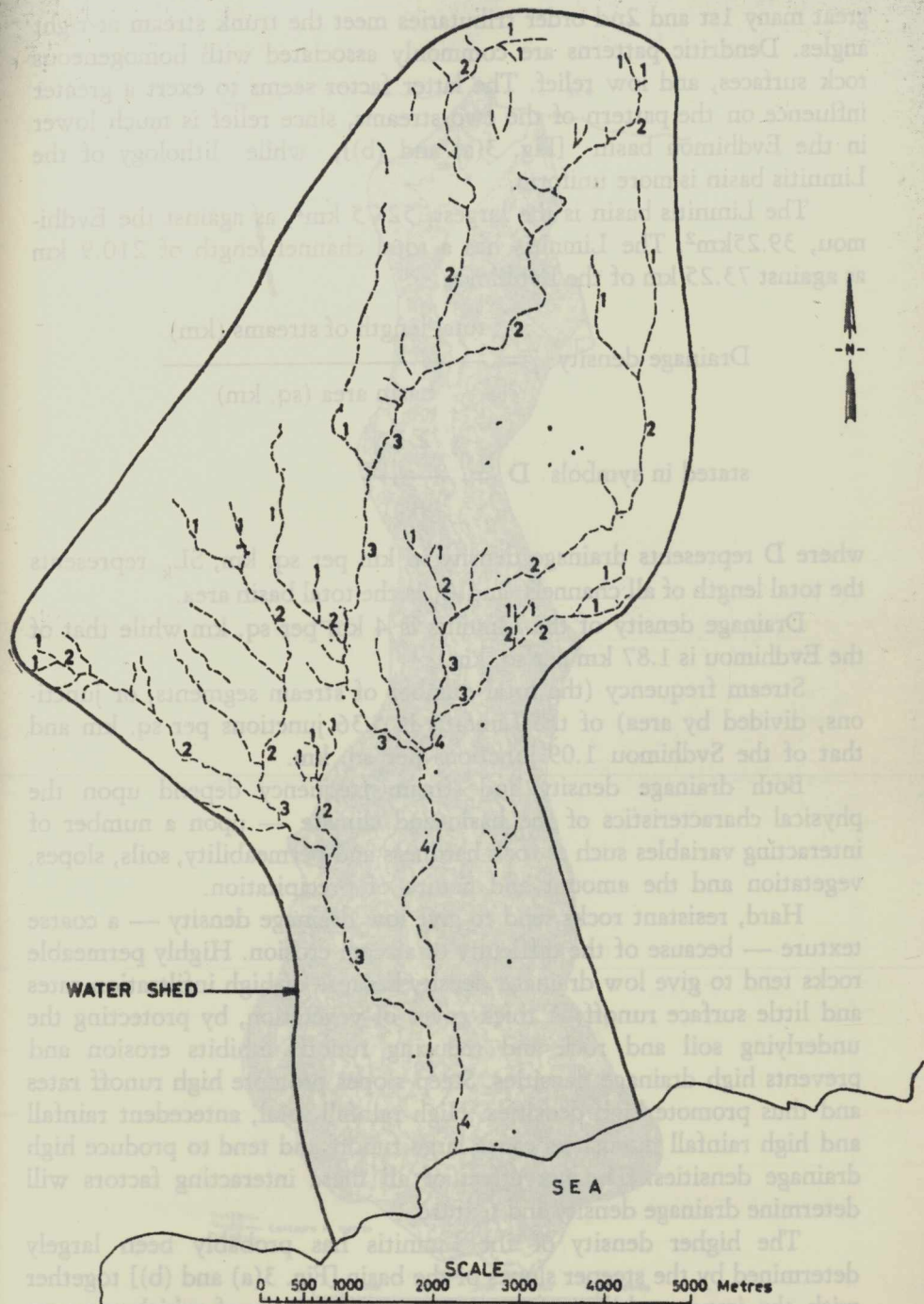


FIG. 2(b) STREAM ORDERS OF EVDHIMOU RIVER BASIN

great many 1st and 2nd order tributaries meet the trunk stream at right angles. Dendritic patterns are commonly associated with homogeneous rock surfaces, and low relief. The latter factor seems to exert a greater influence on the pattern of the two streams, since relief is much lower in the Evdhimou basin [Fig. 3(a) and (b)], while lithology of the Limnitis basin is more uniform.

The Limnitis basin is the largest, 52.75 km², as against the Evdhimou, 39.25km². The Limnitis has a total channel length of 210.9 km as against 73.25 km of the Evdhimou.

$$\text{Drainage density} = \frac{\text{total length of streams (km)}}{\text{basin area (sq. km)}}$$

$$\text{stated in symbols } D = \frac{\sum L_k}{A_k}$$

where D represents drainage density in km per sq. km, $\sum L_k$ represents the total length of all channels, and A_k is the total basin area.

Drainage density of the Limnitis is 4 km per sq. km while that of the Evdhimou is 1.87 km per sq. km.

Stream frequency (the total number of stream segments, or junctions, divided by area) of the Limnitis is 5.36 junctions per sq. km and that of the Svdhimou 1.09 junctions per sq. km.

Both drainage density and stream frequency depend upon the physical characteristics of the basin and climate — upon a number of interacting variables such as rock hardness and permeability, soils, slopes, vegetation and the amount and nature of precipitation.

Hard, resistant rocks tend to give low drainage density — a coarse texture — because of the difficulty of stream erosion. Highly permeable rocks tend to give low drainage density because of high infiltration rates and little surface runoff. A thick cover of vegetation, by protecting the underlying soil and rock and reducing runoff, inhibits erosion and prevents high drainage densities. Steep slopes promote high runoff rates and thus promote high densities. High rainfall total, antecedent rainfall and high rainfall intensities cause large runoff and tend to produce high drainage densities. The net effect of all these interacting factors will determine drainage density and texture.

The higher density of the Limnitis has probably been largely determined by the steeper slopes of the basin [Fig. 3(a) and (b)] together with the impermeability of the igneous rocks both of which promote runoff, while the semi-permeable chalky and marly strata and gentler



FIG 3 (a) RELIEF OF LIMNITIS BASIN

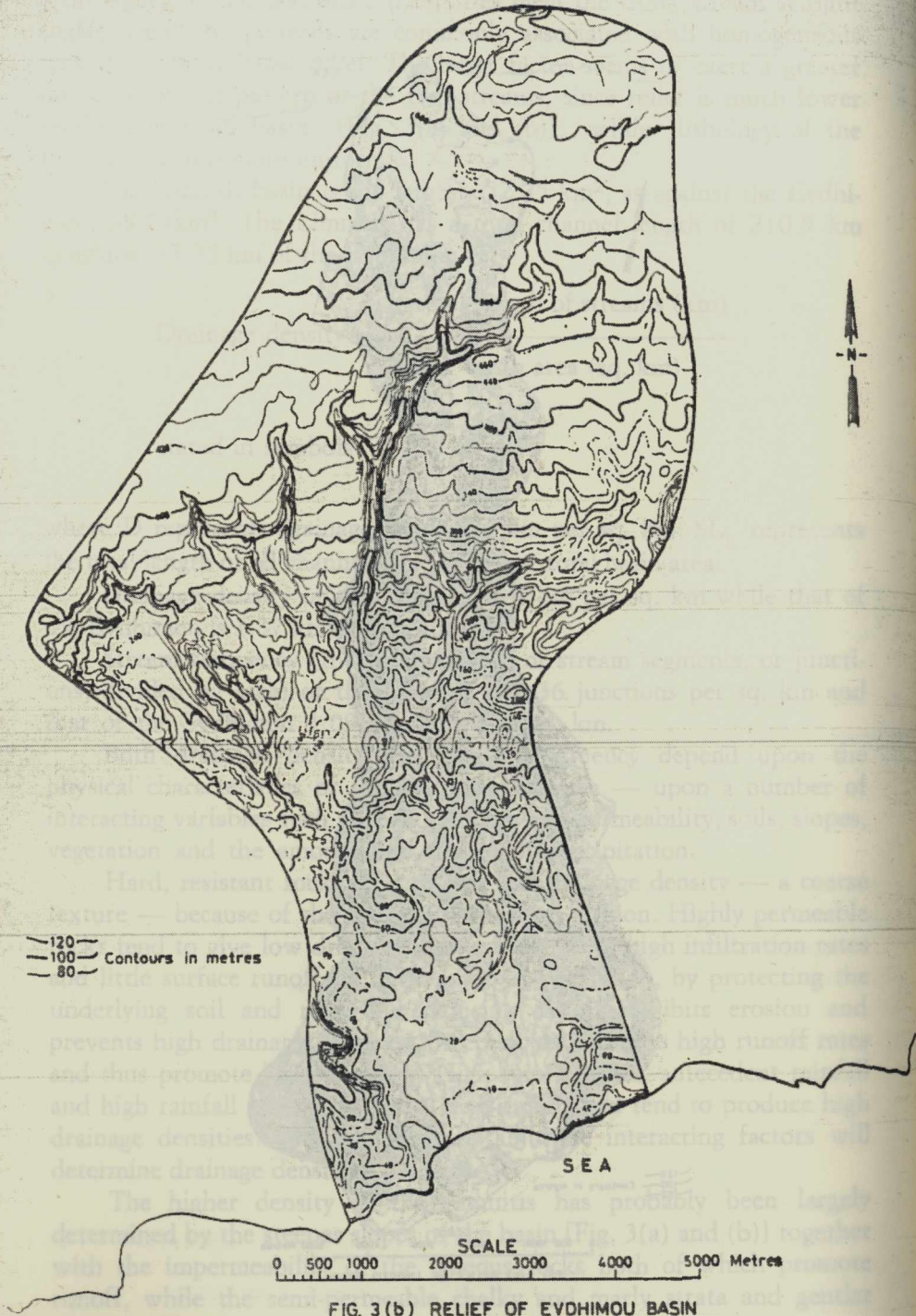
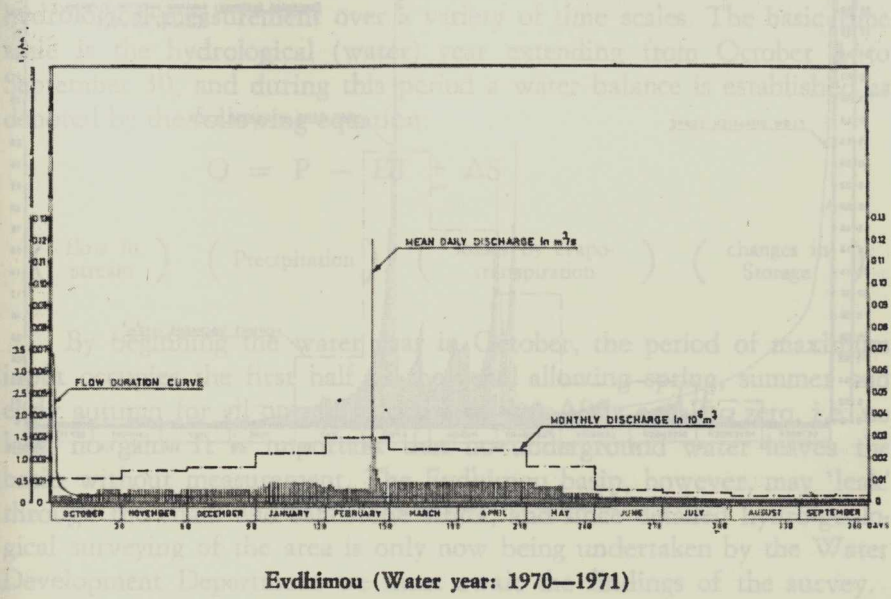


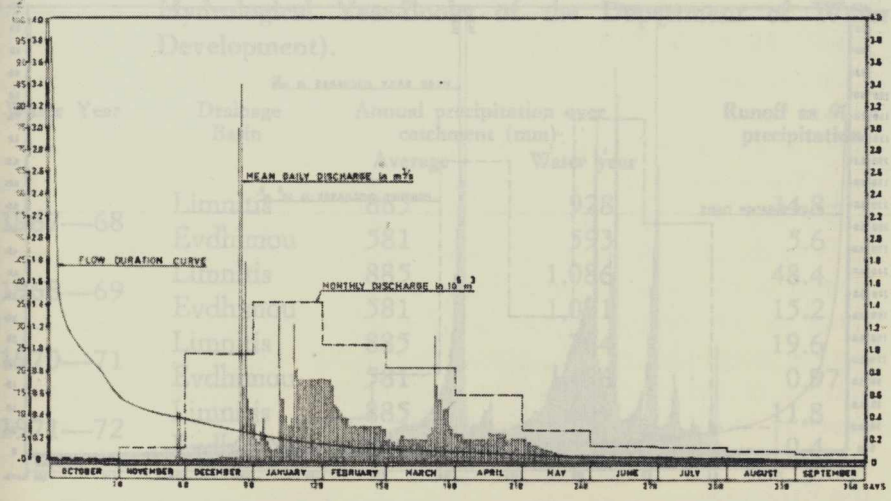
FIG. 3(b) RELIEF OF EVDHIMOU BASIN

slopes of the Evdhimou restrict runoff. These deductions are further supported by the hydrographs of the two streams [Fig. 4(a) and (b)].



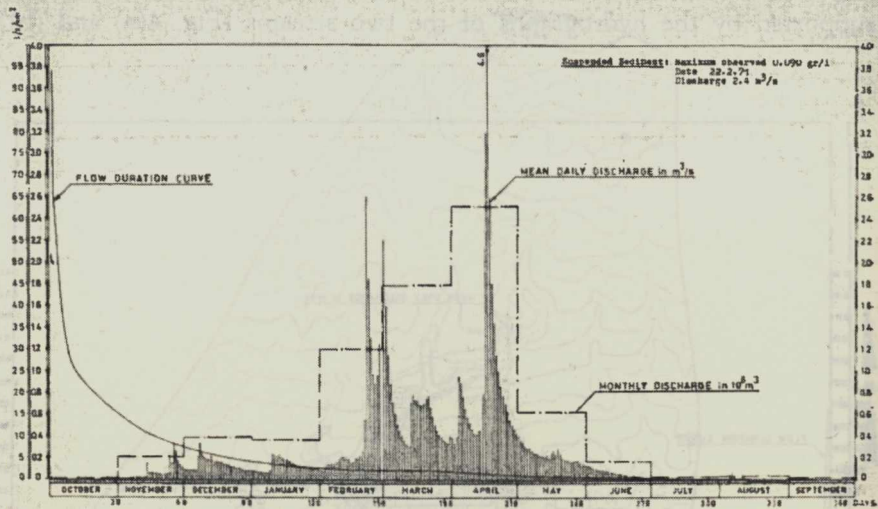
Evdhimou (Water year: 1970—1971)

Table 1. Hydrological data of Limnitis and Evdhimou basins (from Department of Water Development).

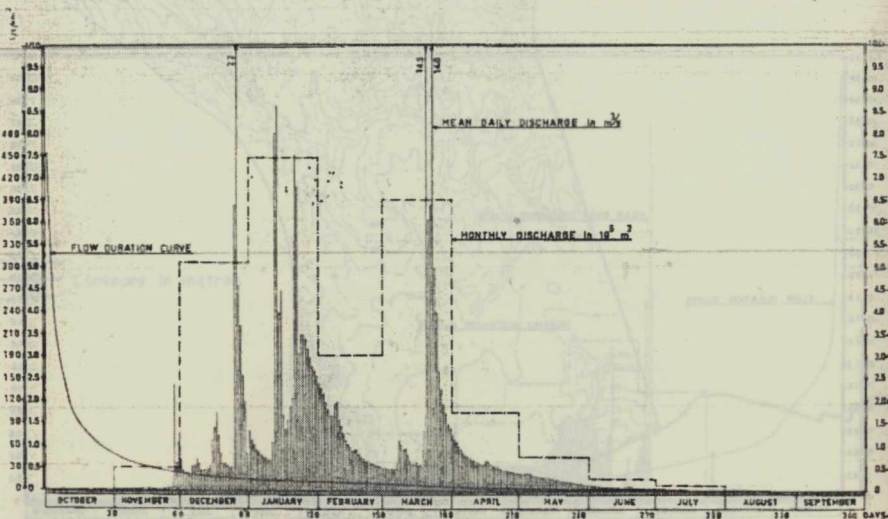


Evdhimou (Water year 1968—1969)

Fig. 4(a) Stream hydrographs for the Evdhimou (from Hydrological Year Books — Department of Water Development)



Limnitis (Water year 1970—1971)



Limnitis (Water year 1968—1969)

Fig. 4(b) Stream hydrographs for the Limnitis (from Hydrological Year Books — Department of Water Development).

FIG. 3(b) RELIEF OF EVCHINOLU BASIN

WATER BALANCE

The drainage basin or catchment area is taken as the unit for hydrological measurement over a variety of time scales. The basic time scale is the hydrological (water) year extending from October 1 to September 30, and during this period a water balance is established as denoted by the following equation:

$$Q = P - ET + \Delta S$$

$$\left(\begin{array}{c} \text{flow in} \\ \text{stream} \end{array} \right) = \left(\begin{array}{c} \text{Precipitation} \end{array} \right) - \left(\begin{array}{c} \text{losses by evapo-} \\ \text{transpiration} \end{array} \right) + \left(\begin{array}{c} \text{changes in} \\ \text{Storage} \end{array} \right)$$

By beginning the water year in October, the period of maximum input occupies the first half of the year, allowing spring, summer and early autumn for all output to occur so that ΔS is equal to zero, i.e. no loss, no gain. It is important that no underground water leaves the basin without measurement. The Evdhimou basin, however, may 'leak' through the chalk and sandstone strata, and since detailed hydro-geological surveying of the area is only now being undertaken by the Water Development Department we must await the findings of the survey.

Runoff for the two basins expressed as a percentage of rainfall and other data is given in Table 1.

Table 1. Hydrological data of Limnitis and Evdhimou basins (from Hydrological Year-Books of the Department of Water Development).

Water Year	Drainage Basin	Annual precipitation over catchment (mm)		Runoff as % of precipitation
		Average	Water year	
1967—68	Limnitis	885	928	34.8
	Evdhimou	581	593	5.6
1968—69	Limnitis	885	1,086	48.4
	Evdhimou	581	1,071	15.2
1970—71	Limnitis	885	764	19.6
	Evdhimou	581	496	0.97
1971—72	Limnitis	885	609	11.8
	Evdhimou	581	411	0.4

The hydrographs of the two streams (Fig. 4) for 1968—69 (a wet year) and 1970—71 (with below average rainfall) show how the streams responded to different rainfall inputs.

Applying the water balance equation to the two streams and assuming $\Delta S=0$, we obtain the following in respect of Q and ET.

	Limnitis		Evdhimou	
	Q as % of P	ET as % of P	Q as % of P	ET as % of P
1967—68	34.8	65.2	5.6	94.4
1968—69	48.4	51.6	15.2	84.8
1970—71	19.6	80.4	0.97	99.03
1971—72	11.8	88.2	0.4	99.6

It is obvious that the Limnitis has much larger total and peak discharge than the Evdhimou and in the discussion that follows we shall attempt to account for this contrast.

Total discharge of streams, as well as the height and shape of floods as depicted in hydrographs, are influenced by a number of static and dynamic variables. The static variables include area of basin, vegetation, geology and soils, gradient of slope and stream network; the dynamic variables include rainfall total, intensity of rainfall, antecedent rainfall and changes in loss rate.

Runoff characteristics, particularly maximum flows, will be affected by area, thus the larger area of the Limnitis basin will tend to give higher flows.

The Limnitis basin is on igneous rocks, mostly diabase with some pillow lavas near the coast, which are impermeable, while the Evdhimou basin is on permeable sandstones and chinks as well as impermeable marls. Thus the Evdhimou has a fair amount of storage while the Limnitis has very little, that consists of the joints near the surface and a fault zone running across the basin. Soils have not been considered because we lacked data concerning thickness and infiltration rates.

The amount of water delayed by storage 'en route' to the stream varies not only with soils and rock permeability but also with slopes both of the hill sides and the stream channels. Slopes are generally much steeper in the Limnitis basin, being about 35° in angle or steeper, while those of the Evdhimou average 4°—10°, being much steeper in the narrow gorge-like valleys incised in the dip slope of the cuesta. The spacing of the contour lines in Fig. 3 gives a fair impression of the contrast in slope. The gradient of the rivers themselves — average gradient from head to mouth — is 1:20 for the Limnitis and 1:23 for the Evdhimou.

The density of the stream net influences runoff delay since the velocity of water down the slope, by throughflow or surface runoff, will not be as great as in the stream channel. Thus the higher drainage

density of the Limnitis promotes runoff.

The Limnitis basin has an almost complete cover of pine forest or scrub, while the Evdhimou is mainly under scattered carob trees, scrub and arable crops (autumn-sown wheat or barley). Vegetation encourages runoff delay and storage while it also causes loss by evapotranspiration, especially during windy weather. Its net effect on total discharge cannot be easily assessed, though it is clear that it reduces flood peaks and lengthens lag time.

Concluding on the static variables, we can say that almost all factors except vegetation, in the Limnitis basin promote runoff and high peak discharge with steep rise and fall of the flood wave, as shown in the hydrographs. In contrast, the more permeable rocks, gentler slopes and lower drainage density of the Evdhimou tend to reduce runoff and produce the much more even flow of this river.

Of the dynamic variables, we could obtain data only on total rainfall (Table 1). Total rainfall shows a fairly good correlation with runoff percentage, particularly for the Limnitis basin. The importance of total rainfall in influencing runoff is illustrated by the following (Fig. 5): In

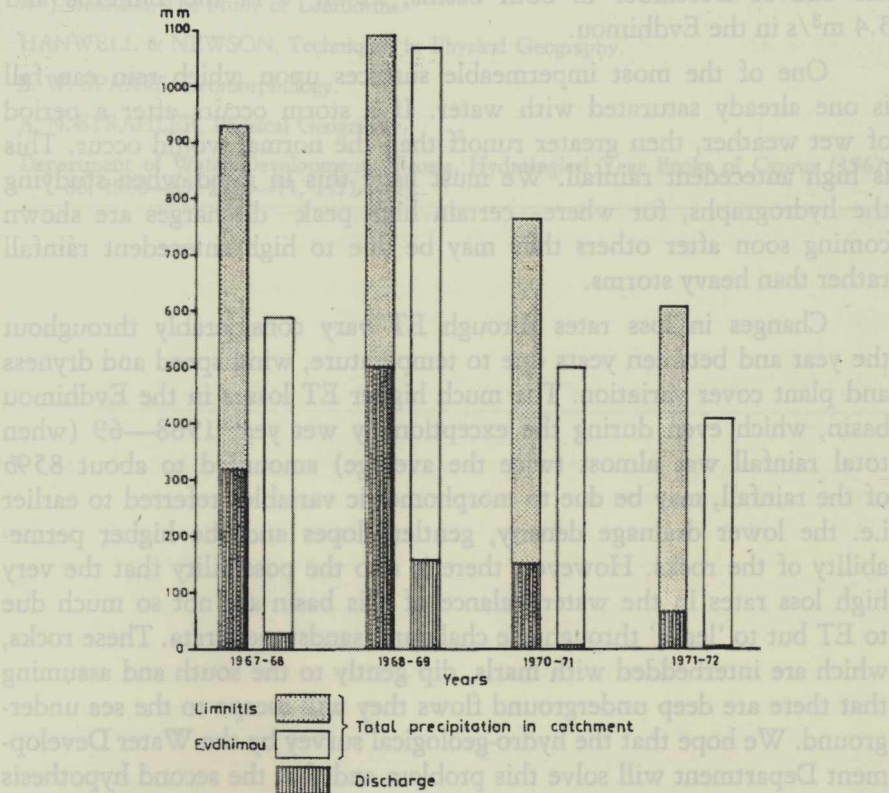


Fig. 5 Precipitation and runoff in the two catchments

1968—69, a very wet year, when total rainfall in both basins was over 1000 mm, runoff of the Limnitis was about 48% of rainfall and of the Evdhimou 15%, while in 1967—68, an almost average year in respect of total rainfall with 928 mm for Limnitis and 593 for Evdhimou, the runoff percentages were about 35 and 6 respectively. In the dry year 1971—72, total rainfall in the Limnitis was about 60% of the 1968—69 rainfall and in the Evdhimou 40%, but the respective runoff percentages were only 25% and 3% of the 1968—69 runoff. The very low runoff percentages in the dry years indicate that ET percentage losses are higher in dry than in wet years.

The influence of total rainfall on peak discharge is not clear, particularly since we lack data on rainfall intensity which would have enabled us to isolate the effects of each variable. Peak discharge is promoted by both factors, since a high total rainfall saturates the rocks and soil, promoting very high peak discharge from storms (like antecedent rainfall); thus the former enhances the effects of the latter. The hydrographs of 1968—69 show the highest floods which occurred near the end of December in both basins, 22 m³/s in the Limnitis and 3.4 m³/s in the Evdhimou.

One of the most impermeable surfaces upon which rain can fall is one already saturated with water. If a storm occurs after a period of wet weather, then greater runoff than the normal would occur. This is high antecedent rainfall. We must have this in mind when studying the hydrographs, for where certain high peak discharges are shown coming soon after others they may be due to high antecedent rainfall rather than heavy storms.

Changes in loss rates through ET vary considerably throughout the year and between years due to temperature, wind speed and dryness and plant cover variation. The much higher ET losses in the Evdhimou basin, which even during the exceptionally wet year 1968—69 (when total rainfall was almost twice the average) amounted to about 85% of the rainfall, may be due to morphometric variables referred to earlier i.e. the lower drainage density, gentler slopes and the higher permeability of the rocks. However, there is also the possibility that the very high loss rates in the water balance of this basin are not so much due to ET but to 'leaks' through the chalk and sandstone strata. These rocks, which are interbedded with marls, dip gently to the south and assuming that there are deep underground flows they will escape to the sea underground. We hope that the hydro-geological survey by the Water Development Department will solve this problem and that the second hypothesis will be proved right.

It can be seen from this report that there are many factors which must be taken into account when a study of this kind is attempted. Not only must they all be taken into account but all should be correlated since they all interact. We hope that by our study we have demonstrated the usefulness of morphometric and water balance analysis in obtaining an understanding of the behaviour of the two streams.

ACKNOWLEDGEMENTS

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**ΓΕΝΙΚΗ ΣΥΝΕΛΕΥΣΗ ΤΩΝ ΜΕΛΩΝ
ΤΟΥ Γ.Ο.Κ. ΚΑΙ Η ΛΟΓΟΔΟΣΙΑ
ΤΟΥ ΠΡΟΕΔΡΟΥ κ. ΘΘ. ΓΙΑΓΚΟΥΛΛΗ**

Στις 6 Νοεμβρίου, 1976, πραγματοποιήθηκε η Γενική Συνέλευση των μελών του Γ.Ο.Κ. στο άμφιθέατρο του Γραφείου Δημοσίων Πληροφοριών. Μετά τη λογοδοσία του Προέδρου και την ανάγνωση της ταμειακής έκθέσεως, έγιναν αρχαιρεσίες για ανάδειξη του νέου Διοικητικού Συμβουλίου για την περίοδο 1977—1978. Οι επιλεγέντες καταρτίσθηκαν σε σώμα ως ακολούθως: Όθων Γιαγκουλλής, Πρόεδρος, Άνδρέας Κλ. Σοφοκλέους, Α' Άντιπρόεδρος, Παναγιώτης Άργυρίδης, Β' Άντιπρόεδρος, Φώτης Άναστάση, Γενικός Γραμματεΰς, Νίκος Ρωσσίδης, Βοηθός Γενικός Γραμματεΰς, Γεώργιος Φιλίππου, Ταμίας, Παύλος Πιπερίδης, Εισπράκτωρ, Νίκος Βάκης, Έφορος Δημοσίων Σχέσεων, Άνδρέας Μαυροματίης, Έφορος Χαρτοθήκης—Βιβλιοθήκης, Νίκος Γεωργιάδης, Έφορος Κοινωνικών Έκδηλώσεων και Μιχαήλ Μάντης, Έφορος Ταξιδίων και Τοπικών Μελετών.

Τό κείμενο της λογοδοσίας του Προέδρου του Γ.Ο.Κ. κ. Όθωνος Γιαγκουλλή, παρατίθεται πιο κάτω:

Άγαπητά μέλη,

Άποτελεί ιδιαίτερη χαρά και τιμή να λογοδοτήσω για τα πεπραγμένα έτος Όμιλου, που παρά τις αντίξοες συνθήκες που δημιούργησε ή Τουρκική εισβολή και κατοχή όχι μόνο δέν περιόρισε τις δραστηριότητές του αλλά τις ένέτεινε. Η υπερπήδηση τόσων εμποδίων μάς επιτρέπει ν' άτενίζουμε τό μέλλον έλπιδοφόρα. Έπιτρέψτε μου ν' άναφερθώ, όμως, σε συντομία στα πεπραγμένα της υπό έπισκόπηση διετίας και να σκιαγραφήσω τους μελλοντικούς μας στόχους.

Η διοργάνωση του Διεθνούς Συμποσίου Πολιτικής Γεωγραφίας άποτελεί όμολογουμένως μία από τις μεγαλύτερες επιτεύξεις του Όμιλου μας. Με ή συμμετοχή ξένων έπιστημόνων και την άνάλυση από γεωπολιτικής σκοπιάς διαφόρων πτυχών του Κυπριακού προβλήματος, συμβάλαμε θετικά στον τομέα της διαφώτισης και την προβολή του θέματός μας σε διεθνή επίπεδα. Η έκδοση των «Πρακτικών του Συμποσίου» συμπλήρωσε την προσπάθεια αυτή γιατί με την ανάγνωση τους δίνεται ή εύκαιρία σε κάθε μελετητή των Μεσανατολικών υποθέσεων να σχηματίσει μία σαφέστερη εικόνα για τό δίκαιο της Κύπρου. Παράλληλα, ή φιλοδοξία μας να κυκλοφορήσουμε τά «Πρακτικά» άνά τό Παγκόσμιο ένισχύει σημαντικά τους σκοπούς για τους όποιους οργανώσαμε τό Συμπόσιο και προσβάλλει διεθνώς τον Όμιλό μας. Δέν χωρεί άμφιβολία πως με καλή όργάνωση ύπάρχουν μεγάλες προοπτικές για διάθεση όλων των άντιτύπων. Πιστεύω πως ή όργάνωση του Συμποσίου έδωσε την εύκαιρία στο Κυπριακό κοινό να δείξει μεγαλύτερη κατανόηση στη σπουδαιότητα της γεωγραφίας.

Στόν τομέα των εκδόσεων ξεπεράσαμε κάθε προηγούμενο. Στο υπό έπισκόπηση διάστημα κυκλοφορήσαμε δυό διπλά τεύχη των «Γεωγραφικών Χρονικών», που καλύπτουν ή χρονική περίοδο 1975—76, άνατυπώσαμε άρχαιο χάρτη της Κύπρου του 19ου αιώνα, του πρώτου που άπεικονίζει την Κύπρο με

τή σημερινή της μορφή, εκδώσαμε τὰ «Πρακτικά τοῦ Συμποσίου» καὶ ἀξιόλογη μελέτη τοῦ Συμβούλου τῆς Ἑλληνικῆς Πρεσβείας κ. Χρ. Ζαχαράκι, ποὺ πραγματεύεται τὸ θέμα «Ἐγυπτιη Χαρτογράφηση τοῦ Ἑλληνικοῦ Χώρου ἀπὸ τὸν 15ον—18ον αἰώνα». Γιὰ τὶς ἐκδόσεις αὐτὲς διαθέσαμε κονδύλι 2,000 περὶπου λιρῶν. Τὰ ἔσοδά μας ἀπ' αὐτὲς τὶς ἐκδόσεις ἀνέρχονται μέχρι τὴ στιγμή σὲ 2945. Πρέπει ἔμωις νὰ λάβουμε ὑπ' ὄψη πὼς δυὸ ἀπὸ τὶς ἐκδόσεις τέθηκαν σὲ κυκλοφορία μόλις πρόσφατα καὶ δὲν παρασχέθηκε χρόνος νὰ ὀργανώσουμε τὴ διάθεσή τους. Μὲ εὐσυνείδητη προσπάθεια καὶ καλὴ ὀργάνωση μπορούμε νὰ ὑπερκαλύψουμε τὰ ἔξοδά μας. Μὲ τὶς γεωγραφικὲς ἐκδόσεις ὁ Γ.Ο.Κ. συμβάλλει σημαντικὰ στὴν προώθηση τῆς γεωγραφικῆς γνώσης στὸν τόπο μᾶς, ποὺ ἀποτελεῖ μιὰ ἀπὸ τὶς βασικότερες ἐπιδιώξεις του. Ἐπιπρόσθετα, οἱ ἐκδόσεις ἀποτελοῦν τὴ βάση, ποὺ θὰ χρησιμοποιήσουν οἱ μεταγενέστεροι γιὰ περαιτέρω ἔρευνα καὶ προώθηση τῆς Γεωγραφίας τοῦ χώρου στὸν ὁποῖο ζοῦμε.

Δὲν θὰ ἐπεκταθῶ σ' ὅλες τὶς δραστηριότης μας γιατί αὐτὲς ἀναφέρονται στὰ δελτία τοῦ Γ.Ο.Κ. τῶν ἐτῶν 1975 καὶ 1976. Θάθελα ἔμωις νὰ τονίσω πὼς ἐξ αἰτίας τῶν προσπαθειῶν μας διορίστηκαν, γιὰ πρώτη φορὰ μετὰ τὴν περίοδο τοῦ 1970, προσοντούχοι γεωγράφοι. Ἐπιθυμῶ νὰ τονίσω ἐμφαντικὰ, ἔμωις, πὼς κάθε ἄλλο παρὰ ἀπόλυτα ἱκανοποιημένοι εἴμαστε στὸ θέμα ἀξιοποίησης καὶ διορισμοῦ προσοντούχων γεωγράφων. Ἀντίθετα, νοιώσαμε ἀπογοήτευση ἀπὸ τὸ γεγονός πὼς τὸ Ἰπουργεῖο Παιδείας, ἐνῶ ἀναγνωρίζει ὅτι ἡ γεωγραφία ὑστερεῖ ἔναντι ἄλλων μαθημάτων, ἐντούτοις περιορίστηκε στὸ διορισμὸ δυὸ μόνο γεωγράφων καὶ ἄφησε ἔτσι ἀναξιοποίητο ὑφιστάμενο προσοντούχο προσωπικό, ποὺ μπορούσε νὰ συμβάλῃ στὴ βελτίωση τοῦ μαθήματος. Πρὸς τοὺς πικραμένους ἀδιόριστους συναδέλφους δίδουμε τούτη τὴν ὑπόσχεση: Θὰ ἐντείνουμε τὶς προσπάθειές μας,

1ον) Γιὰ τροποποίηση τῶν σχεδίων ὑπηρεσίας ὥστε νὰ ἀρθῇ ἡ ἄνιση μεταχείριση ποὺ ὑπάρχει μετὰξὺ ὑποψηφίων γιὰ διορισμὸ στὴ θέση καθηγητῆ στὴ κλίμακα Β 10 καὶ Β 3 ἀντιστοίχως.

2ον) Γιὰ ἀξιοποίηση καὶ διορισμὸ ὅλων τῶν ἀδιόριστων προσοντούχων γεωγράφων.

3ον) Γιὰ τροποποίηση τοῦ ἀναλυτικοῦ προγράμματος, ὥστε τὸ μάθημα γεωγραφίας νὰ διδάσκεται τοῦλάχιστο πάνω σὲ δίωρη δάση σ' ὅλες τὶς τάξεις τῶν Σχολῶν Μέσης Ἐκπαίδευσης.

4ον) Γιὰ τὴ δημιουργία θέσης ὀργανωτοῦ ἢ ἐπιθεωρητοῦ στὸ μάθημα γεωγραφίας, ποὺ θὰ συμβάλῃ στὴν πρέπουσα προώθηση τοῦ μαθήματος καὶ τέλος θὰ συνεχίσουμε τὶς προσπάθειες γιὰ στενότερη προσέγγιση καὶ συνεργασία μὲ τὸ Ἰπουργεῖο Παιδείας χωρὶς, ἔμωις, νὰ διστάζουμε νὰ καταγγέλουμε τὶς καταστάσεις ποὺ κατὰ τὴ γνώμη μας ἀποτελοῦν τροχοπέδη στὶς προσπάθειες γιὰ ἐκσυγχρονισμὸ τοῦ μαθήματος καὶ διορισμὸ προσοντούχων γεωγράφων.

Ἐπιβάλλεται ἐπίσης ἡ ἐντατικοποίηση τῆς προσπάθειας γιὰ νὰ πεισθοῦν τὰ διάφορα Ἰπουργεῖα καὶ Ἡμικρατικοὶ Ὄργανισμοὶ περὶ τῆς ἀναγκαιότητας διορισμοῦ γεωγράφων.

Ὅσον ἀφορᾷ τὶς ἐκδόσεις, στόχος μας πρέπει νὰναι ἡ συνέχισή τους γιατί, σ' ἀντίθεση μὲ ἄλλες ἐκδηλώσεις ποὺ ἔχουν ἀντίκτυπο μόνο σὲ μιὰ δεδομένη στιγμή τοῦ χρόνου, ἡ ἀξία τους δὲν περιορίζεται μὲ τὸ πέρασμα τοῦ χρόνου. Ἰδιαιτέρως πρέπει νὰ καταβληθοῦν προσπάθειες ὥστε τὸ δελτίον τοῦ Ὁμίλου νὰ ἐκδίδεται πάνω σὲ ἐξαμηνιαία δάση χωρὶς καθυστερήσεις γιὰ νὰ μὴ χάσου-

με την έμπιστοσύνη μας στο κοινό του έσωτερικού και του έξωτερικού. Μία σχετική αδυναμία μας ήταν στον τομέα διαθέσεως των εκδόσεων. Αναμφίβολα, ή συνέχισή τους είναι αλληλένδετη με τή διάθεσή τους γιατί χωρίς τήν κατάλληλη προώθησή τους θα δημιουργηθή ένα δυσβάστακτο οικονομικό βάρος για τον Όμιλο. Επιβάλλεται, συνεπώς, οργανωμένη και εύσυνείδητη δουλειά για να ξεπεραστή αυτή ή σχετική αδυναμία. Παράλληλα με τις εκδόσεις πρέπει να καταγραφούν τὰ διβλία και να οργανωθή και έμπλουτισθή ή διβλιοθήκη του Όμιλου στις αίθουσες Δημοτικής Άγορας που μας παραχώρησε ο Δήμος Λευκωσίας και τούτο πάνω σε προσωρινή βάση, μέχρις ότου εξασφαλίσουμε καλύτερο χώρο.

Στήν προσεχή διετία πρέπει κατά τή γνώμη μου τó νέο Δ.Σ. να οργανώσει μέσα στο 1977 μεγάλη πολιτιστική εκδήλωση που να περιλαμβάνη τὰ φίλμς που ή Έλληνική και Κυπριακή Άντιπροσωπεία παρουσίασε στη Διάσκεψη ΧΑΡΙΤΑΤ, έκθεση φωτογραφιών και άλλου ύλικού που να καλύπτη διάφορες πτυχές τής γεωγραφίας τής Ελλάδας και τής Κύπρου και έκθεση κυπριακού και έλλαδικού Γεωγραφικού διβλίου και μέσα στο 1978 να οργανωθή τó 2ον Διεθνές Συμπόσιο Γεωγραφίας.

Παράλληλα, πρέπει να καταβληθούν προσπάθειες για επαναλειτουργία του θεσμού του Παγκυπρίου Μαθητικού Διαγωνισμού Γεωγραφίας και να συνεχισθή ή προσπάθεια για οργάνωση διαλέξεων και άλλων συναφών εκδηλώσεων.

Τελειώνοντας, επιθυμώ να εισηγηθώ τροποποίηση του καταστατικού ώστε στη θέση του Προέδρου, που αποτελεί τó πιό ψηλό λειτουργήμα, να μη εκλέγεται τó ίδιο πρόσωπο για συνεχές διάστημα μεγαλύτερο των δύο θητειών. Με τον τρόπο αυτό θα παρασχεθή ή ευκαιρία σε περισσότερα μέλη του Όμιλου να δείξουν τις ικανότητές τους. Θα επιθυμούσα επίσης να ευχαριστήσω τον Α' Άντιπρόεδρο κ. Α. Σοφοκλέους για τις σημαντικές υπηρεσίες του στον Όμιλο, τον Β' Άντιπρόεδρο κ. Π. Άργυρίδη για τó ζήλο που επέδειξε στην εκτέλεση των καθηκόντων του, τον κ. Γ. Φιλίππου, που εκτέλεσε επάξια χρέη ταμία, τον κ. Α. Μαυραμάτη για τó ψηλό αίσημα ευθύνης, τον Γ. Γραμματέα κ. Ν. Γεωργιάδη για τήν προσφορά του και γενικά όλα τὰ μέλη του Δ.Σ. για τή στενή συνεργασία τους. Αναμφιβόλως, οι επιτυχίες του Όμιλου οφείλονται στο γεγονός ότι τὰ μέλη του Δ.Σ., στην πλειοψηφία τους, θυσίασαν τó μεγαλύτερο μέρος του ελεύθερου τους χρόνου για τήν προώθηση τής γεωγραφικής σκέψης στον τόπο μας. Εύχομαι στο διάδοχο σχήμα να επιδείξη τον ίδιο ζήλο και άφοσίωση.

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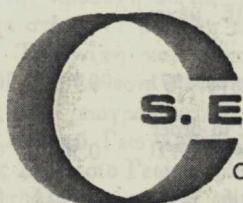
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ΚΕΟ

**Άπο σήμερα μέχρι και τέλη Άπριλίου
για κάθε 12 φιάλες μπύρας ΚΕΟ
παίρνετε και 1 δωρεάν.**