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PHILIPPINE GEOGRAPHICAL JOURNAL

VOLUME XIX

Oct.-Nov.-Dec., 1975

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GEOGRAPHY AS A SCIENCE DISCIPLINE¹

by

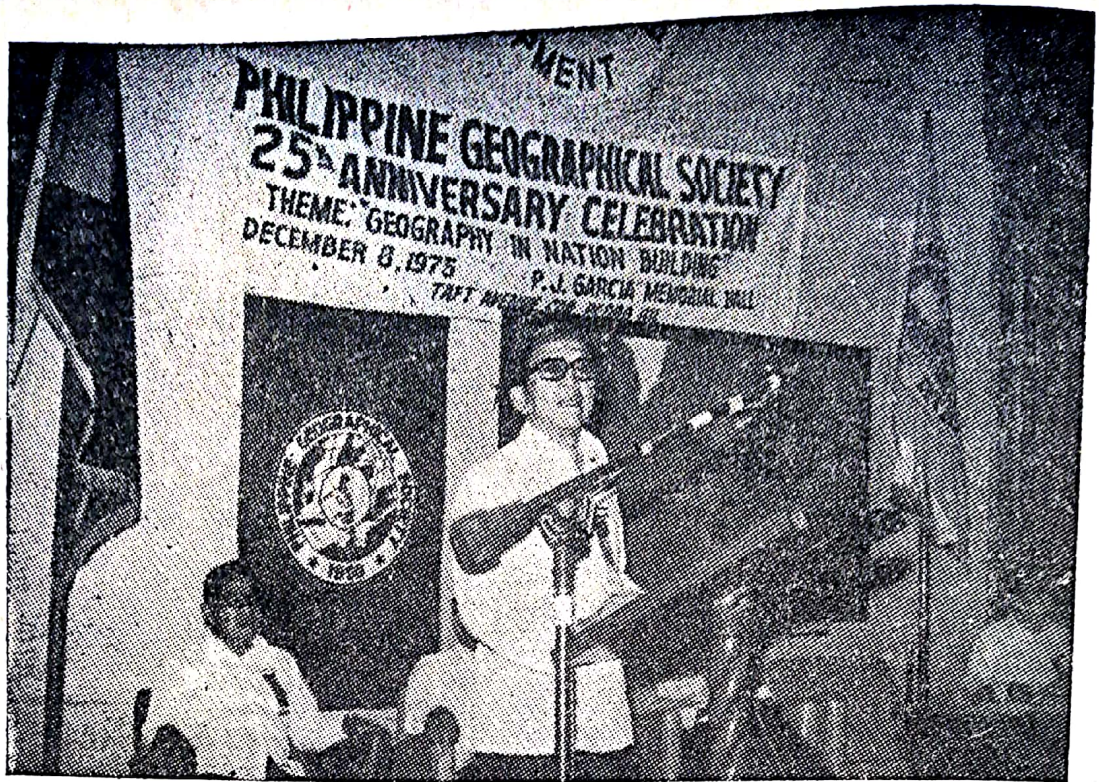
PEDRO G. AFABLE²

I consider it a rare privilege to be with you this morning on this historic occasion, the silver jubilee celebration of the Philippine Geographical Society. Twenty five years seemed to be a fleeting moment in the time scale of history. To the Society, however, it is a milestone worthy to commemorate with renewed pledges of the members for greater service to the cause of geographic science in particular and to the development of the country in general, especially in the building of the New Society as boldly enunciated by our beloved President Ferdinand E. Marcos. This is a reaffirmation in line with the theme of today's celebration, which is "Geography in Nation Building."

In retrospect, I would like to recall the founding of the Philippine Geographical Society on 8 December 1950 by a group of twenty-one men of different persuasions. Of this original group, ten may have either passed away or lost interest in the society with the passage of time. Those who remained and persevered have succeeded in staying together and nurturing the growth of the Society, thereby overcoming the *niñgas cogon* malaise as well as the intrigues that are the bane of societies like yours and that cause them to break apart into smaller groups each snipping at the other and disparaging each other's accomplishments. If one has to take into account this local social ailment, it is indeed a tribute to the Philippine Geographical Society that it has endured for so long, that it has withstood the vicissitudes of time and that it continues to grow even more vigorously, as evidenced by the attendance in today's celebration. In this commendable performance of the Society, the leadership and dedication of one man remain outstanding. I refer to Prof. Dominador Z. Rosell, founding member, who has served the Society continuously as secretary, vice-president, past president for five terms and now incumbent President.

¹ Opening Remarks delivered at the 25th Anniversary Celebration of the Philippine Geographical Society at the P. J. Garcia Memorial Hall, Manila on 8 December 1975.

² Vice-chairman and Executive Director, National Science Development Board, Bicutan, Tagig, Rizal.



VICE-CHAIRMAN AFABLE DELIVERING THE OPENING REMARKS.

The National Science Development Board has long recognized the importance of geography as a scientific discipline and as an essential tool for development. As generally accepted, geography is the study of earth as man's environment. It is interdisciplinary in character and intermediary between the social science and the natural science. In further elaboration, the Haper Encyclopedia of Science states as follows: "As the subject matter of geography, Earth may be considered as the totality of its physical features, its biotic features (the product of plant and animal life), and the works of man. Yet each of these groups is of particular concern to other scientists. The geologist studies the physical features of Earth; biologists are specialists in flora and fauna; whatever man does concerns the social scientist. Obviously, then, the subject matter, insofar as it relates to geography, must be studied in a special way. To the Geographer, it is the interrelationship of all these elements — physical, biotic, human — that is significant. x x x"

Today's development and planning activities have been utilizing more and more the techniques of geographic science and its applications in the improvement of the human environment. As geographer's main focal interest is man, it is but natural that the science of geography is an integration of many specialized knowledges in order to effectively serve humanity and the development process. In general studies of such fields as climates, physical features, soils and vegetations to the extent that they relate to human society are within the realm of geography. Without this relevance and/or orientation, such studies revert to their respective disciplines in the natural sciences.

The program for this session indicates that the subject to be discussed by our guest of honor and principal speaker (Senator Arturo M. Tolentino) is "Archipelagic Theory and the Law of the Sea." This global problem, which is the concern of nearly every country in the world and under serious study by the United

Nations, has great relevance to human societies on earth. Certain aspects of the problem, therefore, are of concern to geographers of different specializations. Since the subject (Law of the Sea) is vast in extent and complex in character, it is interrelated to many disciplines of science with geography as one of the major scientific disciplines to play a role. On the basis of my limited information on the subject, I may advance the view that some geographer-specialists could better synthesize aspects of the problem as they relate to human societies that would be served in the end. These specialists might include physiographers (geographers of physical features), historical geographers, cartographers (geographers of communicating information thru maps) and geographer-geologists.

It may be pertinent, at this juncture, to enumerate in brief some major activities of the NSDB related to geographic science. These are:

(1) The NSDB established as early as 1968 the National Committee on Geographical Sciences, composed of representatives of government agencies and private institutions concerned with geography, in order to effectively coordinate, promote and assist studies and researches relating to geography and its branches.

(2) The NSDB has extended financial assistance to the Philippine Geographical Society, as needed from time to time, for the publication of its journals and/or scientific papers. This is in line with the NSDB policy to encourage the growth of scientific and technological societies and to promote exchange of technical and scientific information.

(3) The NSDB invariably gives financial grant in support of travel expenses abroad of geographers attending important international conferences on geographic science that are relevant to the country's scientific activities.

(4) The NSDB has recently conducted an in-depth study on vehicles of information for the regular publication of results of researches and studies undertaken locally as well as recent advances in science abroad. In this manner, research results and other scientific studies can be duly disseminated, and those concerned scientists of the country including geographers can be provided with the means to be read and heard.

We of the NSDB are happy to be chosen as one of the cooperating agencies for this silver jubilee celebration of the Philippine Geographical Society. Forums such as this serve as effective vehicles for the exchange of scientific information and to develop close relationships among scientists.

In conclusion, I wish to extend in behalf of the NSDB and my own greetings and congratulations to the Philippine Geographical Society on the occasion of its 25th anniversary, with the hope that the Society will continue to contribute its due share in the country's national development efforts. To the founding members and other active members, may this occasion serve as the renewal of faith for the vision of the past and for greater dedication to the meaningful aspirations of the years to come.

I now extend warm welcome to the distinguished participants, honored guests, geographers and friends of the Society to this session with the wish that you would find the deliberations fruitful and rewarding.

Thank you and good day.

25 YEARS OF THE PHILIPPINE GEOGRAPHICAL SOCIETY¹

by

DOMINGO C. SALITA²

A quarter of a century ago a group of twenty-one scholars and scientists headed by the late Dr. Jose M. Feliciano who was then the head of the Department of Geology and Geography, University of the Philippines, organized the Philippine Geographical Society. The first set of officers who administered the affairs of the organization were: Dr. Jose M. Feliciano, President; Dr. William J. Ellis, then principal science officer of the United Nations in Manila, Vice-President; Prof. Dominador Z. Rosell, Secretary; and Prof. Arturo Alcaraz, Treasurer.

The objective of the organization which was spelled out in its Constitution shall be to foster geographic interest and geographic education and to encourage the application of geographic knowledge in education, government, business and other forms of human activity.

Geography is both a social and a natural science discipline. It studies the earth as the home of man. Because of the breadth of its contents, Geography is accurately described as the queen of the sciences and the core in the unity of knowledge. The study of geography has become more relevant in our times because of monumental changes affecting the economic, social, and political structures of nations. These changes are brought about by complex factors including the advances in science and technology, rapid growth of population, depletion of natural resources and the degradation of the environment to which the geographer has a primary interest. In our own country, the environmental problems, such as the energy crisis, the pollution of air, land, and water, the rural-urban migration, the conservation of natural resources, socio-economic development and the problems of human settlements are proper subjects in geographical study.

Like any organization, the Philippine Geographical Society needs a dedicated leader so that it can grow and develop as a scientific and scholarly organization worthy of its name. During its 25 years of existence the presidency of the As-

¹ Read before the 25th Anniversary Program, Philippine Geographical Society, Dec. 8, 1975.

² Vice-President, Philippine Geographical Society; Dean, College of Arts and Sciences, University of the Philippines, Diliman, Quezon City.

sociation was held by Dr. Jose M. Feliciano for two years; Dr. Charles O. Houston, two years; Prof. Dominador Z. Rosell, 15 years, Dr. Alejandro R. Apacible, three years and Dr. Domingo C. Salita, three years. While all the officers and members have contributed to the growth and development of the organization, the leadership of Prof. Dominador Z. Rosell deserves to be cited for the long and distinguished service that he has rendered to the Philippine Geographical Society and for advancing the profession of geography in our country.

It is not uncommon for the members to say that Prof. Rosell is the Philippine Geographical Society for almost single-handedly he carried the brunt of keeping the organization alive and recognized not only locally but also internationally. Through his initiative and resourcefulness the Society managed to publish the Philippine Geographical Journal, the official publication of the Association which is being sent to about 100 countries of the world. During the last regional conference of the International Geographic Union held in New Zealand last year copies of our Journal were presented by Prof. Rosell which created a good impression about our country and people.

In order that our local geographers can be abreast with geographic knowledge abroad, Prof. Rosell successfully persuaded the National Science Development Board to serve as the adhering organization so that the Philippines can be admitted a member of the International Geographic Union. The NSDB subsequently created the National Committee on Geographical Sciences as its clearing house and research arm on geographic matters. Within the progressive outlook and support of the NSDB, the Philippines became a member of the International Geographic Union in 1969.

In recognition of its reliability and scholarly performance as shown in the contents and regular publication of its Journal the Philippine Geographical Society was admitted a member of the Philippine Social Science Council in 1974, an organization dedicated in the promotion and advancement of research in the field of social science.

On the occasion of its 25th year anniversary, we say Mabuhay to the Philippine Geographical Society and its Journal.

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PHILIPPINE ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

To the Honorary Members, Founder Fellows, Fellows and Members, remember that on October 26, 27 and 28, 1976, will be the 25th Anniversary celebration of the Association. Watch for the program to be published in the PHILAAS Newsletter.

D. Z. ROSELL

ARCHIPELAGIC THEORY AND THE LAW OF THE SEA¹

by

AMBASSADOR ARTURO M. TOLENTINO²

It is a pleasure to be here this morning to speak to such a quality gathering of people who are actually interested in the subject to be discussed. I appreciate the invitation that was extended to me and I wish to thank the Society for this.

Let me congratulate and greet the Philippine Geographical Society on its 25th Anniversary, its Silver Jubilee. As Vice-Chairman Afable said, this survival for a quarter of a century is proof that there is no such thing as *niñgas cogon* in this Society. I wish to congratulate the founding members, the active members for their zeal and devotion to the advancement of knowledge of geography, and for focusing attention to the pivotal importance of geography to mankind and in particular to the people of our country. Without geography there would perhaps be no Conference on the Law of the Sea, as the pivotal factor in that Conference is actually geography. And it can easily be understood how big a stake our country and people have in the Law of the Sea that will be formulated by that Conference.

I see from the messages that are printed in your program that no less than the President of the Philippines emphasizes the relationship between the Law of the Sea and geography. His message reads in part:

"The Society observes this jubilee at a time when worldwide attention is focused on various issues related to geography and geology.

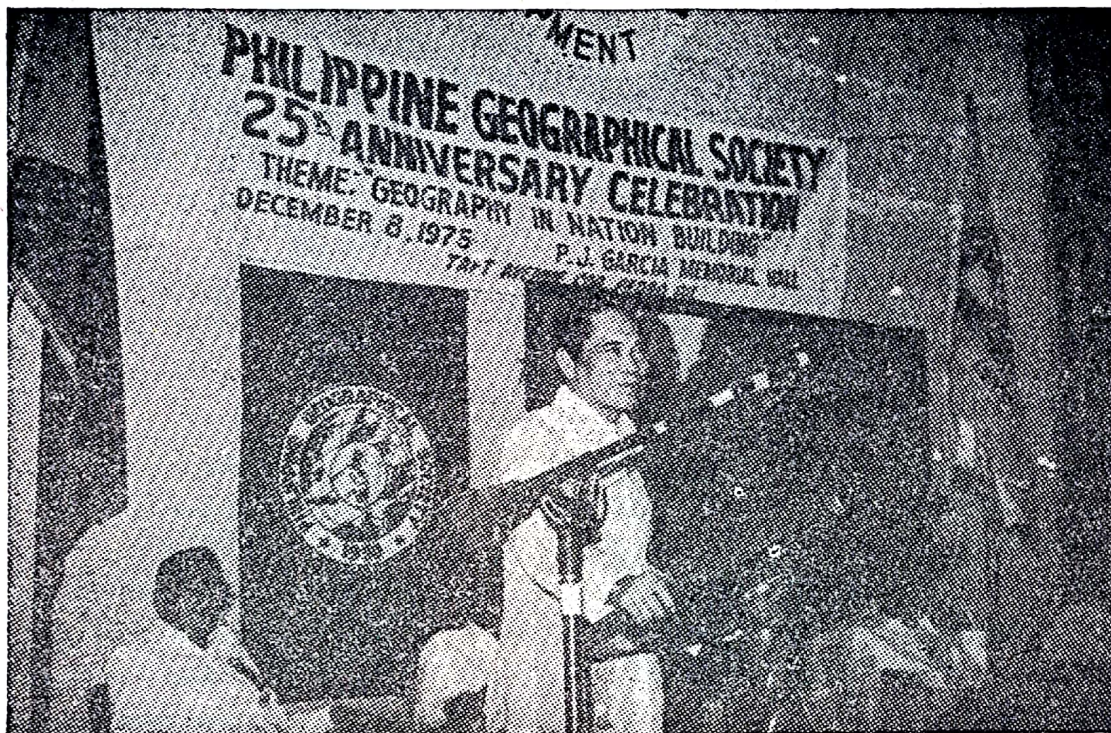
"A major question for discussion among the nations of the world today is the matter of a Law of the Sea, in which our country is a principal proponent of the Archipelagic Theory."

The Conference on the Law of the Sea, now known as the Third U.N. Conference on the Law of the Sea, is charged with a tremendous task, and that is to formulate a code of laws that would govern the seas, their use and exploitation, and those of the seabed and the subsoil beneath it.

A universally accepted international Law of the Sea is vital to the future of the peace of mankind. Right now, perhaps, we do not fully realize this, but the statesmen of the world, in calling this Conference on the Law of the Sea for a recodification, a restudy, and reassessment of the Law of the Sea, are actually

¹ Speech delivered on the occasion of the 25th anniversary of the Philippine Geographical Society on December 8, 1975 at the P. J. Garcia Memorial Hall, Manila.

² Head of Philippine Delegation to the UN Conference on the Law of the Sea.



AMBASSADOR ARTURO M. TOLENTINO EXPLAINING THE ARCHIPELAGIC THEORY AND LAW OF THE SEA.

forseeing that unless there is an agreement on the rules and regulations regarding the seas and their resources as well as the resources on and under the seabed, there will be a danger to the peace and security of mankind.

History tells us that in the past nations have gone to war, not so much because of politics but more fundamentally because of economic resources. Wars have been fought for the mastery or control of areas of land rich in resources. Many lives have been given up in such wars.

Now we are faced with the reality that the resources on land are being depleted. A time will come when the resources on land will be gone. Even food supply from the soil may not be sufficient for the increasing world population. These realities are driving the attention of the leaders of the world towards the ocean as the next source of resources and food supply. There is even thought of living in the water, of building cities on the bottom of the sea.

It is easy to realize and imagine that increasing competition of people for the resources of the waters and the areas under the sea, can generate bitterness that could erupt into wars. It is this danger to the peace of mankind that makes an international Law of the Sea imperative.

There is a great deal of difficulty being encountered by the Conference on the Law of the Sea, but the leaders of nations continue with this Conference in the hope that ultimately we can draft an acceptable Law of the Sea that will guide the conduct of states in the exploitation of the resources of the sea and of the areas under the sea.

I remember that after the first Conference on the Law of the Sea in 1958, which failed to settle the question of the breadth of the territorial sea, the second Conference on the Law of the Sea was held in 1960 but reached no conclusion. The only objective of the 1960 Conference was to set a limit for the territorial sea of states. We are all aware that there has been a traditional limit of three miles as the extent of the territorial sea measured from the coast line. In that second conference a United States-Canadian proposal would extend the territorial sea to six miles plus an additional six miles for the contiguous zone over which there would be jurisdiction for certain purposes, but not sovereignty, on the part of the coastal states.

Whatever the limit of the territorial sea that would be fixed, whether it was six miles or twelve miles, we did not care very much. We have our own concept of our territorial sea. As head of our delegation, I asked that the Archipelagic Principle be recognized and our unique territorial sea be considered as an exception to any breadth that may be approved. We do not have a uniform breadth of territorial sea. In some areas our territorial sea is over 200 miles, but in some areas it is less even than three miles. When the United States refused to accept our case as an exception, I did not vote for the United States-Canadian proposal; I abstained. The conference failed because of one vote lacking in the two-thirds vote needed for the approval of the resolution. That resulted in the collapse of the Conference, which was not immediately followed by another.

Interest in another conference disappeared for a decade, until this Third Conference on the Law of the Sea was convened in December, 1973, after three years preparatory work by the UN Seabed Committee. This new effort to formulate a new Law of the Sea has been going on now for five years, beset with difficulties. Yet the states of the world are continuing in their effort, are not giving up in spite of what may appear to be discouraging conflicts in the conference, which give rise at times to fears that there may be no agreement. The different countries of the world are bent on seeking an agreement because of the consciousness that a law of the sea is vital to the peace of mankind in the future.

This conference is not just going to compile what is now known as the existing law of the sea. In this conference new concepts which have never been heard of before are being discussed and may become part of international law.

One of the most outstanding of these concepts is what is known as the *exclusive economic zone*. This is a 200-mile breadth of water measured from the baseline or roughly from the shore. Within this 200-mile area, coastal states shall have jurisdiction over all the resources of the sea, of the waters and the seabed, and of the subsoil beneath the seabed. So that if there are minerals on the bottom and below the bottom of the sea, the coastal state for a distance of 200 miles from the baselines will have a right, an exclusive right, over these resources. While in principle this is now generally accepted in the conference, there are still some difficulties with respect to the extent of the rights within the zone that shall be recognized in favor of third states in relation to the resources and the coastal

state. This new concept may practically render of little importance the territorial sea.

The territorial sea concept, way back in the past, was formulated as a matter of national security. The three-mile territorial sea was conceived because at that time a cannon shot could go only three miles, and so with a territorial sea of three miles under the sovereignty of the coastal state, a cannon ball from a foreign warship standing beyond three miles from the shore would not reach the coastal state. Everybody knows that this is no longer realistic basis for the territorial sea, because even with a territorial sea of 1,000 miles, a coastal state is not secure from missiles. But if a territorial sea of 12 miles (which is the prevailing sentiment) is approved, a 200-mile exclusive economic zone would wipe out the economic importance of the territorial sea.

Another major concept in the Conference, unknown before in international law, is what is called as the *heritage of mankind*. In principle it means that the waters and its resources, and those beneath the waters, which are outside of the national jurisdiction of the different states, belong to and constitute a heritage of mankind. Therefore whatever could be taken of these resources cannot be appropriated exclusively by anyone who has the power, the know-how or the wealth to take it. It is proposed that these resources must be placed under the supervision of some international organization, representing mankind, and the income therefrom be distributed to all countries on some acceptable basis or ratio.

Formerly, the rule was that the open seas and everything in them, belong to everyone, that means to anyone who has the capability to exploit them. Any country or its citizens with the means and technology can just draw whatever minerals they can get out of the sea, and on or beneath the bottom of the sea. And if citizens of another country, protected by its war vessels, go to the same area and put up their own machinery or equipment for exploiting the same resources, a fight may ensue. This is what is sought to be avoided, by declaring all the resources outside of the limits of national jurisdiction of the different countries as the heritage of mankind.

These two important concepts — the exclusive economic zone and the heritage of mankind — are emerging in the Conference on the Law of the Sea. Of course, there are others, but they are not, I believe, as important as these two concepts which are both very novel in international law. We are for both of these, for the economic zone, and for the heritage of mankind.

Aside from these, we have our special interest in what is known as the *archipelagic theory or principle*. This also is a new concept in international law. We have been the pioneer in advancing this concept, but now we have with us other archipelagic states working for the approval of the concept of the archipelago.

In the past, because this concept was unknown to international law, every island was considered a separate entity in itself. In an archipelago composed of

several islands, every island was considered as generating its own territorial sea. If the territorial sea is three miles, it means that every island has a body of water around it three miles in width which is its territorial sea. Applied to the Philippine archipelago, it means that the island of Luzon would have around itself a three-mile territorial sea, and the islands of Samar, Leyte, Panay, Negros, Mindanao, Cebu, and so on, will have their respective territorial seas.

What would be the result? The result will be that beyond three miles from the shore of each island there would still be large bodies of water, because the waters between our islands are certainly, in many places, more than six miles. Allowing three miles on each side, there would still be waters between that would no longer be territorial sea, but would be considered as open sea which would not be under the sovereignty of the Philippines anymore. This would in effect mean an actual dismemberment of the Philippines.

Now, what is the Archipelagic Principle? Under the Archipelagic Principle, the archipelagic state, the Philippines, let us say, would be authorized to draw an imaginary line connecting the outermost points of the outermost islands of the archipelago, a sort of a fence drawn around the entire archipelago touching on the outermost points. This line drawn around the archipelago is what is known as the baseline. All the waters inside our baseline or legal fence would be internal waters of the Philippines subject to the dominion and complete sovereignty of our country. The territorial sea of the Philippines will have to be measured, not from the shores of islands, but from this baseline surrounding the entire archipelago. The territorial sea will be the area or water outside the archipelago proper beyond the baseline and reaching up to what is known as the international limits of the Philippines.

We want to establish these baselines surrounding the archipelago so that all the waters and their resources, including the seabed, and its sub-soil, within this baseline will be not only owned by us but under our complete sovereignty. This means that nobody can get into the waters within this baseline without permission from the Philippine Government. Whether a vessel is a merchant vessel carrying cargo and passengers, whether it is a fishing boat of some other country, whether it is an oil tanker that wants to pass through, or whether it is a war vessel — conventional or nuclear — they cannot get into these waters or get the resources in or beneath them without the consent of the Philippine Government. This is, in brief, the archipelagic principle, and this is our main stake in the Conference on the Law of the Sea.

When we first advocated this in 1958 in the First Conference on the Law of the Sea, there was no opposition to it but nobody was in favor of it, either. The delegates completely ignored our proposal. When we reiterated it in 1960 in the Second Conference, the United States simply would not accept it. But since the meetings of the U. N. Seabed Committee and during the sessions of the Conference itself, a growing interest in the Archipelagic Principle has been noted. We have been advocating this principle since the Second Conference in 1960, in

every international forum possible. Finally, other states have taken notice of it, and I may say, quite safely, that as far as the principle itself is concerned, it has come to be generally accepted — that archipelagos may draw baselines inclosing their islands, by joining the outermost points of the outermost islands.

The differences of views are largely in the details in the implementation of this principle. The most important of these is the question of passage through the waters in the archipelago. As I said, we do not want any vessel to enter these waters without the consent of the Philippines; but naturally, other countries who have vessels, — merchant vessels, fishing fleets, warships, tankers, etc., — would want the right to pass through these waters because that will shorten the navigating distance between the China Sea and the Pacific Ocean on the east or the Celebes Sea in the South.

The maritime states are insisting on what is known as transit passage through these waters. This is a new concept that they would like to introduce in the Law of the Sea. Formerly, when foreign ships go through waters under the sovereignty of another state, the only right recognized by international law was what was known as *innocent passage*, limited to the territorial sea and subject to regulation by international law. But now, what the big states want is *transit passage*. Under this, all types of vessels of foreign countries can pass freely without interruption, without hindrance, without regulation by the archipelagic state, through these waters. In other words, they will have a right to pass through these waters inside the archipelago with the same facility, with the same right as when they are passing over the open seas like the Pacific Ocean, the Atlantic Ocean or the China Sea. That means that free passage on the high seas would be translated into transit passage through the internal or archipelagic waters, giving foreign vessels more rights over internal waters than over the territorial sea, over which only innocent passage is recognized by present international law.

This is the main point of controversy between archipelagic states on one hand and the major maritime powers on the other hand. As far as big powers are concerned, I think they are deeply interested in the passage of naval vessels, including nuclear-powered vessels. Others may be more interested in the passage of tankers and fishing boats. In the face of these we have taken a hard-line position of allowing only *innocent passage* of commercial vessels, or those carrying cargo and passengers, in the internal or archipelagic waters, but not of fishing boats, not of oil tankers, not of warships, not of nuclear-powered vessels. We would provide special rules for different types of vessels, requiring previous notification and/or consent in some cases. With respect to submarines we want them to sail on the surface; while the naval powers want the vessels to navigate in their usual mode of navigation, which means, in case of submarines, below the surface.

I cannot discuss with you at this time all the details of this Archipelagic Principle, but these are the basic points of the principle and the main issue that we have with the big maritime powers.

Next year there will be another session of the Conference, to be held in New York, and I suppose it will again try at arriving at some kind of an agreement. Personally, I am not very optimistic about this next meeting, but it is always good to try, so that ultimately some breakthrough may be found, reconciling the conflicting views of the different states.

The difficulty which complicates the problems of the Law of the Sea Conference is that state positions are not based on abstract principles of international law, but the principles of international law are being shaped to conform with the needs of the different states. And, more important than politics, in which only the major powers are perhaps interested, is the matter of economics. It is economics that I see is the main concern of most states in the Third Conference of the Law of the Sea. When economics is the main concern, legal principles will have to bend to the economic needs of peoples. The emerging international law of the sea may have to be formulated on the basis of what the different states actually feel would be most beneficial for them.

We are trying hard to help in the work of the UN Conference on the Law of the Sea. Our government has attached very great importance to this Conference. President Marcos has been giving full support to our delegation to this Conference. I think that we have the biggest delegation representing the Philippines for any conference at government expense. That indicates how important this conference is to us.

It is our hope that we will be able to have the archipelagic principle, as we want it, accepted by the Conference. It is possible, though, that we will have to yield on some points in order to reach a compromise. To what extent we can yield is a delicate question. From my personal point of view, I do not believe that we can yield to the extent of nullifying the archipelagic concept itself. To my mind, the big powers' proposal of transit passage, would torpedo the archipelagic principle. It is like having a fence around your residential lot and then allowing openings to permit everybody to go through that lot. What is the use of the wall?

Furthermore, we would want to reserve the authority of the archipelagic state to fix the routes through which foreign vessels can pass in our internal waters. In other words, the Philippine government should be able to say: "Merchant ships or commercial vessels can go through any of the ordinary or customary routes of navigation; but oil tankers can go only through this particular Channel because that is the only broad passage they can go through without danger of accident that can cause pollution to our waters." Or, we may say: "War vessels can pass over northern Luzon but not through the Viage, or even deny passage to some vessels, like nuclear vessels.

But the major maritime powers, would want to have free transit through at least *all* the customary routes of navigation. There is a book indicating what are known as the customary routes in each country, and practically all our in-

ternal waters are "customary routes of navigation" — coming from the China Sea towards the Pacific Ocean, coming from the north going south. That would be unacceptable to us, but that is being insisted upon by the major powers.

We hope there can and will be a satisfactory settlement of these and other problems, because this archipelagic principle is vital to the future of our people, not only on the matter of security, but on the question of survival.

If the archipelagic principle is not approved in satisfactory form in a Law of the Sea Convention or Treaty, we could still insist on the principle, anyway. Even before Martial Law, we already had laws already laying down this archipelagic principle. I had the privilege of being the author of two laws which lay down the baselines of the Philippine archipelago and the principle that all the waters inside the baselines are internal waters and those outside form the territorial sea up to the international limits. We have these declarations in our legislation, but we are seeking that the principle be included in an international convention on the Law of the Sea so that other countries of the world may be bound to respect this archipelagic principle insofar as the Philippines is concerned.

The head of one delegation asked me at one time during an informal gathering, "Mr. Ambassador, why do you want to enclose so much water? Do you think you can police the length of such baseline?" My answer was this: "No, Mr. Ambassador, just now we do not have the navy nor the air force sufficient to police the entire length of the baselines of my country. But, precisely, since we cannot depend on the law of force, we are seeking the force of law to defend us. That is why we want international law to embody the archipelagic theory."

This is still our position. Since we cannot defend our waters by force of arms, we have to depend upon the force of law, to be established by the Conference on the Law of the Sea.

Thank you very much.

OPEN FORUM

QUESTION:

May I just be clarified on the relation between the concept of the archipelagic principle and the concept of the historic waters of the Philippines?

ANSWER:

As far as the term *historic waters* of the Philippines is concerned, we regard that as covering not only the waters within the archipelago or the waters that would be enclosed under the archipelagic principle but also as including what is known as the territorial sea of the Philippines, which is the body of water outside of the baselines and up to the national boundaries of our country, which sometimes are called the treaty limits. You have seen the map of the Philippines where this national boundary is indicated by a dotted frame almost rectangular in form with a flat side on top and an irregular bottom side.

Unfortunately, we do not have a map here, but the Treaty of Paris, signed between the United States and Spain transferring the Philippine archipelago to the United States, had a technical description of the territory which was being ceded. That technical description described a north-south line in the Pacific Ocean on the east, a similar line in the China Sea on the west, a connecting east-west line up above our northernmost island, and then a line along the islands in the south of Mindanao including the Sulu Archipelago. This is our national boundary.

If the baselines are drawn, as I said, the waters inside the baselines are internal waters and the waters outside up to the Treaty limits are territorial waters or the territorial sea of the Philippines. All of these waters, whether territorial sea or internal waters, have been known as the *historic waters* of the Philippines.

Why historic? Because, Spain, when she was the sovereign over the Philippines, exercised sovereignty over all of these waters for centuries. When she ceded the Philippine Archipelago to the United States under the Treaty of Paris, the United States continued to exercise sovereignty over all of these waters up to the Treaty limits. And then of course, when we became independent, we just continued to exercise our sovereignty over the same waters.

An incident in Geneva, I think it was repeated in Caracas, is worth recalling in this connection. After I had explained this historic basis of our claim over all these waters, the American delegate took the floor and disputed my statement that the United States exercised sovereignty over all of these waters. He claimed that when Spain ceded the Philippine Archipelago to the United States, only the land territory was ceded not including the waters. And he said, when America was in the Philippines, she never exercised sovereignty beyond three miles from the shore of each island because she recognized only a three-mile territorial sea.

I had to reply to this because it was very bad for us; imagine the country that was here before independence saying that she never exercised sovereignty over all of these waters. Answering the claim that Spain ceded only land territory, not including the waters, we pointed out that what was ceded by Spain to the United States was the "Philippine Archipelago". An archipelago by definition is "an island studded sea," or "a sea within numerous islands." So the sea or the water in the archipelago is really the main idea in the definition; what was ceded was "Philippine Archipelago". How can you exclude the water from the archipelago? You can have no archipelago without water. Then, second, I said, if only the land territory was ceded, why was the technical description made in such a way that the corners did not fall on islands? The northern corners on the side of the Pacific Ocean is over 200 miles from the shore is on water, not on any piece of land.

More important than the geographical aspect was the matter of estoppel. When we were under the United States, the highest representative of the American sovereignty here was the Governor-General. We had a Philippine legislature as the Filipino representative in government. The Philippine Legislature enacted in 1932 what was known as the Fisheries Act of the Philippines. This law

stated that all the waters around, and connecting the different islands of the Philippines are internal waters of the Philippines, and that the water beyond the islands to the international limits constitute the territorial waters or the territorial sea of the Philippines. That law was passed by the Philippine Legislature, and the Governor-General signed and approved it. Therefore, America, through her highest representative in the Philippines, affixed its consent or recognition that our waters extended to the treaty limits and that between the islands we and the internal waters.

Then after the Constitution was enacted in the Philippines by our Convention in 1934, it was sent to the United States for approval by the President of the United States pursuant to the Tydings McDuffy Law passed by the American Congress. President Roosevelt signed that Constitution, approved it. The very first article of that Constitution described the national territory of the Philippines as extending to the treaty limits. And territory includes both water and land. Thus, by approving the Constitution, the highest official of the United States gave his recognition of the extent of the waters of the Philippines.

Our delegate from the Coast and Geodetic Survey told us that there had been maps published by the United States during the Commonwealth regime in the Philippines showing the treaty limits as the boundaries of the Commonwealth of the Philippines. We called their attention to that.

Finally, we called their attention to a book of General MacArthur, his autobiography, in which he stated that he was able to repel the Japanese planes before they reached the international limits of the Philippines. MacArthur was defending American sovereignty here, not Philippine sovereignty, because we were still under the United States then. He knew he was defending American sovereignty up to those international limits.

With all these, I said, how could America now say that she never exercised sovereignty beyond three miles from the shore of every island? Of course, I added, perhaps it was convenient now for the United States to say this because she was no longer in the Philippines.

I am sorry that I had to go through this lengthy explanation, but our archipelagic principle is just a part of our claim over our historic waters.

QUESTION:

Please explain the concept of baseline a little more in detail.

ANSWER:

We have a base map here now but I don't know if it is clearly visible to those at the back. You see the blue area is enclosed by a red line. That red line, starting from the top, touches on what we consider the outermost points of the outermost islands of our archipelago. It goes along the coastline of western Luzon, then towards Palawan, then down to the south, to the Sulu Archipelago, across to the Sea of Mindanao and up along the eastern side of Mindanao,

the Visayas and Luzon, to the point of beginning. That is the baseline of the Philippine Archipelago, as set down by our own domestic laws. All the waters inside the baseline are internal waters of the Philippines. However, there is a tendency now in the Conference to call this as archipelagic waters, to distinguish them from other internal waters like lakes and rivers and those waters which are along rugged coastlines where a baseline is also drawn. So, although in our Constitution, they are known as internal waters, in the drafts of the archipelagic concept in the Conference, these are called archipelagic waters.

From the baselines, we measure the breadth of the territorial sea, although in the Philippines this is not of uniform width, as the waters between the baselines and the treaty limits constitute the territorial sea of the Philippines.

QUESTION:

Under the archipelagic principle, do we consider the water that exist between California and Hawaii to be within the U.S. territorial limits?

ANSWER:

No, we do not. In the first place the archipelagic principle now being discussed in the Conference will apply only to states, states which constitute archipelagos, or two or more archipelagos constituting a state. Hawaii is not a sovereign state in itself. It is one of the states of the United States, but the American mainland and Hawaii do not together comprise an archipelago. The principle of the archipelago applies only to an archipelago which constitutes a state in itself, like the Philippines and Indonesia.

QUESTION:

With regards to territorial waters, what can you say about overlapping sea boundaries? Are there any principles concerning this matter also?

ANSWER:

The solution being offered in such cases, with very little opposition in the conference, is that, the neighboring states should agree on their common boundary. If there is no agreement, then the rule of the median line will be followed. We draw a line equidistant from the shores of the two opposite states. Or while the boundary talks are going on, the median line is temporarily to be observed.

With respect to our boundary line in relation to another state, our boundary, or the treaty limit, is fixed. In case Indonesian territorial waters should be of such width as to overlap with the treaty limits, I suppose that our government and the government of Indonesia will enter into some kind of arrangement.

QUESTION:

What has been the extent of violation of our territorial sovereignty under the archipelagic concept? What has the Philippine Government done about these violations?

ANSWER:

We have had from time to time some violations of our territorial sovereignty, and when these violations come to the attention of our government, our government prosecutes the offenders, such as foreign fishing boats who come into our water to fish. But when the violation is committed by government vessels, such as foreign warships, our government files the corresponding diplomatic protest with the country to which the vessels belong. Our government cannot just declare war because of some violation of our sovereignty. It has happened once before to my knowledge. A fleet of British and Australian warships passed through the Balabac Strait, which is part of our internal waters. Our Department of Foreign Affairs filed the necessary diplomatic protest. That is the only thing we can do. When we were meeting about this, somebody suggested that we put mines in these waters, but that was either a drastic suggestion or a joke.

QUESTION:

Regarding the archipelagic concept, do we get assistance from other states of similar structures like Indonesia or Canada?

ANSWER:

On the archipelagic principle we are getting assistance. The four so-called archipelagic states which filed the original archipelagic principle or concept are the Philippines, Indonesia, Fiji, and Mauritius. However, our conditions are a bit different from each other. Perhaps the Philippines is the ideal archipelago. It is compact, with islands very close to each other, and you can see that it really forms a single group. In the case of Indonesia, there is a close similarity to the Philippines, although the area of its waters is much more than our sea territory. But in the case of Fiji and Mauritius, there is a slight difference, in that in the past the big expanse of waters between some remote islands of these two archipelagos have been subject to free passage as open seas. Another archipelago which has just entered the scene in Geneva is the Bahamas. Now we are not very sure of the position of the Bahamas yet, because although it is an archipelago it is a new partner, and it may have different views. She is not a co-author of our draft on archipelagos.

QUESTION:

How long do we have to wait before the heritage of mankind concept is implemented? What is the feasibility of its implementation?

ANSWER:

How long do we have to wait? I do not know, that I do not know. This is such a new principle that I do not think we can agree on its details overnight. It may take sometime to bring about the total acceptance of the principle of the heritage of mankind because this is something very new. Some of the big states may accept the principle and yet when it come, nobody can say. All we have to do is to be patient and try to bring it about soon. It amounts to social justice applied to the wealth of seas outside of national jurisdiction. That may not be

easy to accept on the part of those who are advantaged in their position. As to its implementation, as long as there is good faith among nations, the principle, once accepted with its details, will certainly work.

QUESTION:

In the case that the concept of the heritage of mankind will be approved, do you think that this will not be unfair to the exploring nations in the sense that it will be the ones to make the investments? Is this not just the case of one will do the planting and somebody will reap the harvest?

ANSWER:

Well, no, because I suppose when the rules are laid down the exploring nation will be given what is due for its investment. The concept of the "heritage of mankind" is being conceived in order to prevent the nations who have both wealth and technology from having a monopoly of the resources of the seas outside of national jurisdiction, because they do not produce these resources which God and nature provide. The concept requires the giving up by the exploring nation of some of the income from the exploration to the others. So that even nations who have no seas will benefit. The land-blocked countries have no seas, they have no waters, and yet under the principle, they, too, will benefit from the distribution of whatever will be agreed upon for distribution.

Again, while there is agreement or unanimity on the principle of the heritage of mankind, differences of views will be on the form of management of these exploitations and on the share of nations in the distributions of the products or income from such exploitation. Now those are details which are still hazy and on which some workable agreements will have to be reached. If the big states will agree on these details, it will mean that they do not consider themselves prejudicial even if they are the ones who may have the capital and the know-how for purposes of exploration and exploitation.

QUESTION:

If the principle of transit passage goes through, will this not prejudice our hope to create a zone of peace and neutrality in this part of Asia?

ANSWER:

If the principle of transit passage goes through, will that not prejudice our hope to create a zone of peace and neutrality in this part of Asia? Well, that will depend on what will be the specific provisions in establishing the zone of peace and neutrality. If the zone of peace and neutrality excludes the mere passage of war vessels, then the principle of transit passage will violate the zone of peace and neutrality. But if the principle of peace and neutrality means that the area will be equally open to everybody so long as peace is maintained, the transit passage won't be incompatible with it.

I think no specific answers can be given now. Much will depend on the details if and when the zone of peace and neutrality is established.

IMPRESSIONS ON THE IGU REGIONAL CONFERENCE IN NEW ZEALAND¹

by

DOMINADOR Z. ROSELL²

INTRODUCTION

The Philippines is a member of the International Geographical Union (IGU) since 1968 with the National Science Development Board as the adhering organization. Congress of this Union have taken place on the average of four-year interval during the hundred year period, most of them in Europe.

The first congress was held in Belgium in 1871 and the last one was the 22nd Congress held in Montreal, Canada on August 9-17, 1972. During this Congress, the assembly voted to hold the Regional Conference in New Zealand in December 1974 and the Congress in Moscow scheduled in August 1976.

NATIONAL COMMITTEE ON GEOGRAPHICAL SCIENCES

As member country of the IGU, the Philippines created the National Committee on Geographical Sciences on March 5, 1968 to act as the national working and advisory body in relation with the functions of the NSDB in the promotion of geographical sciences beside acting as international liaison with the International Geographical Union.

Presently, the National Committee consists of (11) members. Membership in this committee is by government and private agencies or organizations. They are: Bureau of Soils, Commission on Volcanology, National Irrigation Administration, Bureau of Mines, Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA), Bureau of Forest Development, National Census and Statistics Office, Department of Agrarian Reform, Bureau of Coast and Geodetic Survey, University of the Philippines, and Philippine Geographical Society.

IGU REGIONAL CONFERENCE

Besides the IGU Congress every four years, the Regional Conferences are held two years after the congress. The last Regional Conference was held in New Zealand at Massey University, Palmerston North on December 4-11, 1974. As Chairman of the NCGS, I represented the Philippines in this conference.

¹ Read before the 25th Anniversary Celebration of the Philippine Geographical Society, December 8, 1975.

² President, Philippine Geographical Society; Chairman, National Committee on Geographical Sciences, NSDB.

Looking at an Atlas, New Zealand is a slender slanted outline closed to the bottom of the world. It appears small and isolated in the vast Pacific Ocean, astride between the equator and the south pole, yet it is about the same size as Italy, but 3.2 million hectares smaller than the Philippines (NZ 26.8 million hectares, RP 30, million hectares).

POLITICAL GEOGRAPHY OF NEW ZEALAND

New Zealand is a self-governing state, a member of the British Commonwealth. Queen Elizabeth is represented by a Governor General. The Parliament has 87 members elected by the party system. It is composed of 83 European members and 4 Maoris.

The Executive Council consisted of 20 ministers and the Governor General who control 40 government departments. The population and settlement consisted of indigenous people who are Maoris of Polynesian ancestry. The European settlement that settled as early as 1830 are mostly British with Chinese, Hindus, Pacific Islanders, Lebanese and Syrians. Two thirds of the people of New Zealand live in North Island.

Agriculture consisted of 1/3 of the land privately owned and devoted to farming-livestock of sheep, dairy cattle, beef cattle and pigs. The exports are wool, meat, dairy, pulp and paper.

The climate has an annual rainfall of 1,245 mm. compared with the Republic of the Philippines of 2,563 mm. The temperature ranges from 6°-19°C. The temperature in January ranges from 15°-19°C. In the Philippines the temperature ranges from 25°-28°C in January.

The population estimate in 1974 was 3,000,000 while in the Philippines in the same year was 42,000,000.

PHILIPPINE DELEGATION

As Chairman of the NCGS, I represented the Philippines in this Conference. Leaving Manila on December 4 at 10:00 p.m., 1974, I arrived Wellington NZ via Sydney, Australia on December 5 at 4:00 p.m.

The taxi fare from Wellington airport to the Bus Terminal was NZ\$ 2.60 for a distance of about 2.5 km. The bus fare from Wellington Bus Terminal to Massey University, Palmerston North, a distance of 125 km, was NZ\$2.50.

1. Sponsors of the Conference — The Royal Society of New Zealand in cooperation with the New Zealand Geographical Society, Inc.
2. There were 515 delegates and participants from the countries bordering the Pacific Ocean, Europe, India, Africa, Thailand, Indonesia, Burma, Malaysia, Bangladesh, Pakistan, and Philippines.

The Conference:

1. Generally, most international conferences are well and properly planned. So except for minor deficiencies the delegates are always satisfied of the facilities and programs implementation.

2. In the International Geographical Congress, there are four years of preparation because decisions as to the next congress site and assembly is decided during the assembly. The Regional Conference has two years preparation because the same is also decided during the congress and assembly. All member countries with official delegates vote in the assembly and can also propose to host the Congress or the Regional Conference. Since New Zealand hosted last year in the Pacific Area, it will take a couple of years before a conference can be held again in the Pacific Region. So the next chance for the Philippines to host will be the IGU Congress which will be the 24th Congress in 1980.

3. Accommodation of Delegates

(1) The conference was held at the Massey University Campus about 2 1/2 km. away of Palmerston North town. Since December is summer vacation, the students are away and the hostels were available to the delegates.

(2) The hostels are so constructed to conform with the rural scenery and landscape. The buildings are group of six called court, a building of three floors and six rooms a floor, one room for one student.

(3) I was assigned to the *Rotary Court* and occupied the ground floor. It seems that the building is so designed to program the students to be self-reliant. Each floor is provided with both toilet and washing tube to wash clothes. At the corridor is an ironing board and electric iron to press the clothes. We did our washing during the seven days we were there.

4. Conference Sessions

(1) There were 5 major sections of the conference, namely:

- a. Social Problems
- b. Natural environment, human impact and perception
- c. Land resources and economic development
- d. City and village
- e. Teaching and task of geography

(2) There were 173 abstracts of papers printed at the time of the conference. There were a number of papers read that interested me, some of them are:

- a. Systems approach to curriculum development in geography by Biddly of Sydney Teachers College, Australia.
- b. Remote sensing application in New Zealand forest resources evaluation — by Cochrane of University of Auckland.
- c. Urban Spatial decision making: A Wellington Case Study by Enright of Canberra College.
- d. Environment by Gharing, University of Mysore, India.
- e. Transport strategies in Regional Development project; Case Study of West Malaysia by Leibach of University of Vermont, Burlington.

(3) Study Tour on Urban-Rural Geography

- a. On December 8, 1974 (Sunday) the papers scheduled for the conference were on Population Geography. In the teaching of Economic Geography, the course usually includes a chapter on Population and Settlement. I was very much interested to attend the session but the Rural-Urban Tour-Study was scheduled on the same day. The tour covered the region from Palmerston North to Wellington with the distance of 125 km. The area is both an urban and rural scenery while Wellington is presently thickly populated. The towns between Palmerston and Wellington are purely rural. Agriculture industry such as sheep, dairy and beef dominated the area. The landscape was beautiful in the summer month in contrast to the highly populated Wellington and vicinities.

(4) The Great outdoor is the laboratory of Geography

- a. The IGU Conference in New Zealand particularly the Tours showed that to study Geography you have to go out in the open and feel the elements of the human habitat, namely — atmosphere, hydrosphere, lithosphere and the biosphere. To study urban or rural settlement and plan for the development nothing more is appropriate for any planner than to be knowledgeable of the various geographic realities. My attendance to this Regional Conference was very fruitful.
- b. We in the NCGS hope that in the forthcoming 23rd IGU Congress in Moscow in August 1976, the Philippines should send more than one delegate to represent the country. With the permission of the NSDB and the Department of Tourism we can bid to host for the next Regional Conference in 1978 or the 24th Congress in 1980. It was indicated that the 23rd IGU Congress in Moscow in August 1976 will have an estimated 5,000 delegates and participants.

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NSDB TECHNOLOGY JOURNAL, VOLUME I, NO. 1, JANUARY-MARCH 1976 — a quarterly organ for Philippine Technological Researchers has just come out of the press.

It is published quarterly for NSDB organic and attached agencies including NSDB Assisted-Projects with office at FORPRIDECOM, College, Laguna 3720, Philippines.

Annual subscription is P20.00 in the Philippines, P5.00 single copy. Foreign rate is US\$15.00 a year, postage included.

This is IT, the Scientific and Technological Community has been waiting for a long time. 1976 must be the year for Science and Technology.

D. Z. ROSELL

GEOGRAPHY AND ITS RELEVANCE TO EDUCATIONAL PROGRAM AND ECONOMIC DEVELOPMENT¹

by

NARCISO B. ALBARRACIN²

INTRODUCTION

That Geography is still an important discipline today is to open page 659 of the 1973 World Almanac. On this page and on the few pages following the subject *Geography* followed by the explanatory title "Miscellaneous Data for the United States" appears. Here are some of the data.

1. The highest point in the United States is Mount McKinley in Alaska.
2. The lowest point is Death Valley in California.
3. The points farthest apart (50 states) are Log Point, Elliot Key, Florida and Kure Island.
4. The Geographic center (50 states) is in Butte Country, South Dakota (west of Castle Rock).
5. The boundaries: between Alaska and Canada — 1,528 miles; between the 48 coter — minus states and Canada (including Great Lakes) is 3,987 miles; and between the United States and Mexico is 1,933 miles.
6. One-third of the United States is forest land.
7. There are 77 rivers 300 or more miles long.
8. Coastlines, weather and climate are treated statistically.

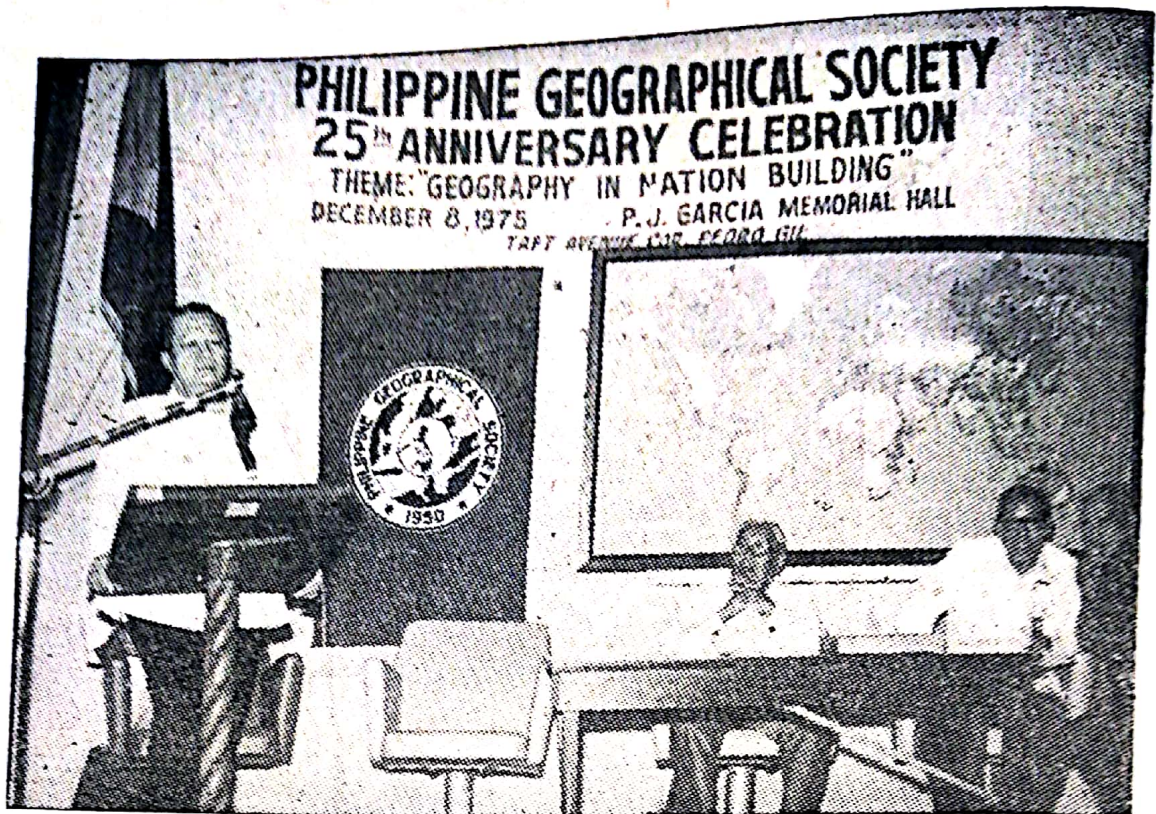
Corresponding facts in Philippine Geography may be cited. For instance, Mount Apo in Davao del Sur is the highest point in the Philippines. Mayon Volcano in Albay is a perfect cone. The Banawe Rice Terraces in Northern Philippines is a popular tourist spot. The Philippines is composed of more than 7,000 islands. There are some controversial facts involving geography and history which at one time brought some sort of trouble to Secretary Carlos P. Romulo. In one of his books he alleged to the displeasure of the people of the cultural communities in the Mountain Provinces of the North that the Mountain people are not Filipinos because not having been conquered by Spain, they were not influenced by Spanish Culture.

NATURE OF GEOGRAPHY

If the data just mentioned constitute the whole of geography, its importance would have been ephemeral and superficial. Fortunately, besides knowledge and

¹ Speech delivered during the 25th Anniversary Program, Philippine Geographical Society, December 8, 1975.

² Undersecretary, Department of Education and Culture.



UNDERSECRETARY ALBARRACIN DELIVERS HIS SPEECH "GEOGRAPHY AND ITS RELEVANCE TO EDUCATIONAL PROGRAM AND ECONOMIC DEVELOPMENT".

information geography involves relationships as can be gleaned from two definitions to wit: (1) Geography is the science that describes the surface of the earth and its associated physical, biological, economic, political and demographic characteristics, especially in terms of large areas and the complex interrelationships among them. (2) Geography is the science of the earth and its life, especially the description of land, sea, air and the distribution of plant and animal life including man and his industries with reference to the mutual relations of these diverse elements. The subject of geography is concerned with the problem, "Why men in various parts of the world work, live and play as they do?". This study calls for a knowledge of geographic controls such as climate, location, surface features and soils as factors which influence the lives of people. Geography no longer consists the ability to locate a place, tells its surface features, climate, industries. Information of this kind can be gained by memorizing facts and can be secured with a minimum of thinking. At the present time, educators are concerned with having the study to enable the child to understand first his own environment and then the environment of other people, to gain knowledge of how conditions of the earth's surface, location and climate affect the three great needs of man: Food, shelter, and clothing. In the main the same body of facts will be required as in the past, but in a more vital relationships and in a way which will enable children to reason from cause to effect in the field of geographical phenomena, and to apply geographic facts and principles to the acquisition of new facts and the solution of new problems. The chronic problem involving the lo-

yalty of our brothers living in cultural communities in Mindanao, Sulu, Palawan and the Mountain Province of the North is more geographical than historical.

HIGHLY EDUCATIVE

The potentials of geography have been recognized in educational programs, past and present. The educational systems established under the Royal Decree of 1863, offered general geography and history of Spain in the primary level. For the girls, instead of Spanish geography and history, employment suitable to their sex were given. According to the late Benigno Aldana, the curriculum looked good; in practice it was more honored in the breach rather than in the observance.

The contemporary educational system established by Act No. 74 of the Philippine Commission otherwise known as the Educational Act of 1901, allotted 725 minutes per week to geography in the elementary, 188 minutes per week more than that required in the elementary schools in the United States on the basis of the following daily time allotments by grades: Grade III — 25; Grade IV — 40; Grade V — 40; and Grade VI — 40. The teaching of geography was disappointing, observed the Monroe Survey Commission, as shown by the results of tests in relation to geographical knowledge. The Commission stated: "Teachers observed seemed to depend too much upon textbook alone. This is characteristic of the general tendency in the schools in neglecting to connect the work of the studies with the life and conditions of the real world. Many teachers are not themselves very strong in their knowledge of geography as a vital socializing subject."

The Revised Philippine Educational Program of 1957 abolished geography as a subject and integrated it in the subject area of Social Studies. Included in the Social Studies area are the following subjects: "Character education, *Geography* (underscoring supplied), history, civics, community problems, good manners and right conduct, and family customs and traditions." The program is intended to orient the learner to the ever-expanding environment beginning with the home, the school, the community and the nation in the primary grades. In Grade V, the regions of the Philippines are taught systematically and brief, units are presented on neighboring countries to the south and north, and on distant Asia and Africa. In Grade VI a study is made on selected countries in other parts of the world. The strongest aspect of the program, stated Chester Swanson in his *A Survey of the Public Schools of the Philippines — 1960*, appears to be those related to home and community living, great men and events in Philippine history, history and geography of the Philippines, and civics. The weakest aspect of the program appears to be those related to the study of other countries. One recommendation of Chester Swanson is: "Steps should be taken to upgrade teachers' background in *Geography* (underscoring supplied) history and other social sciences."

In the educational system established in 1901, physical geography was taught in the high school. This subject was, however, replaced later by general science.

Geography was taught indirectly in the study of history in the different years of the course. In the Revised Philippine Educational Program of 1957, Geography is not included as a subject in the secondary but taught indirectly in Philippine Community Life in the First Year, in Philippine History and Government in the Second Year, in the Philippine Problems in the Third Year. No substantial changes have been made with respect to the components of Social Studies in the 1973 Revised Secondary School Program except the inclusion of the study of the Constitution of the Philippines.

College Geography subjects are offered in some tertiary institutions. In the University of the Philippines, Elements of Geography, Physiography and Geopolitics have been offered since before the Second World War; in the Philippine Normal School, Advanced Geography was offered as an elective subject. Fortunately, my acquaintance with geography is quite adequate for besides elementary and secondary geography subjects, I took all subjects mentioned above in the University of the Philippines and the Philippine Normal School (College).

GEOGRAPHY HIGHLIGHTED

American President Gérard Ford had just left. His public pronouncements and his official conversations with Philippine President Ferdinand Marcos during the twenty-four hours the distinguished visitor stayed in Manila highlighted the importance of geography in the educational program. Central to their discussions and speeches were the geographical and political realities especially of Southeast Asia. The fall of the three Indo-Chinese countries — Cambodia, Laos and South Vietnam — practically necessitated the revision of Philippine foreign policy vis-a-vis the Socialist countries and the United States. Disturbed by the Nixon Doctrine, encouraged by the recognition by most of the Asean countries of the People's Republic of China, spurred by the desire for the neutrality of Asean Nations and apprehensive of the emerging policy of isolation of the Congress of the United States, President Marcos was compelled to adopt a foreign policy independent of that of the United States namely, broadening relations with world community while at the same time strengthening ties with old friends.

This policy together with the posture of self-reliance implies the need of strengthening the position of geography in the educational program. In addition the cultural renaissance induced by the establishment of the Cultural Center of the Philippines and the Folk Arts Theatre, the presentation of the Miss Universe Pageant, the Kasaysayan ng Lahi, the cultural presentations welcoming President Ford and the provisions of the Constitution requiring that Philippine Culture shall be preserved and developed for national identity denotes knowledge of Geography in depth to enable students to understand the rationale of existing cultural practices here and abroad. Further, the broadening of the base of friendship as a cornerstone of our foreign policy and our membership in the United Nations Organizations make it imperative that our people learn more world geography than before. Finally, our determined efforts towards economic development necessitate thorough acquaintance with the history of developed and devel-

oping countries. This is not possible unless we strengthen the role of geography in the curriculum of our schools.

JAPAN: AN EXAMPLE

Japan is an archipelago. It is actually a little bigger than the Philippines in point of land area with a population more than two and a half times as large and with natural resources very much limited than ours. In order for the people to survive it must work very hard and manage its resources with utmost efficiency. As we all know, the Philippines is endowed with rich natural resources. Our waters abound in fish and other seafoods. Without much effort plants grow very well throughout the year. However, while the Japanese are industrious and determined the Filipinos are indolent and complacent. The result? According to the 1970 figures, Lester R. Brown writing in *The Saturday Evening Post* — 1974 stated, that Japan's GNP is the third highest with the United States and the Soviet Union placing first and second, respectively, while the Philippines place 37th with a GNP of \$10,230,000,000 while Japan as third placer a GNP of \$197,180,000,000, U.S. as first with GNP of \$974,100,000,000 and the Soviet Union as second with GNP of \$504,700,000,000. Without intimate knowledge of world geography, the discrepancies in the economic performance of the four countries mentioned could not be explained effectively.

EDUCATIONAL PROGRAM

Our present educational program of which geography is one of the components of the Social Studies area is a response to the administration's call for national development. In Presidential Decree No. 6-A otherwise known as the Educational Development Decree of 1972, the goals and objectives of National Development are stated as follows:

"Sec. 2. *Declaration of Policy.* It is hereby declared to be the policy of the government to ensure, within the context of a free and democratic system maximum contribution of the educational system to the attainment of the following national development goals:

- A. To achieve and maintain an accelerating rate of economic development and social progress;
- B. To ensure the maximum participation of all the people in the attainment and enjoyment of the benefits of such growth; and
- C. To strengthen national consciousness and promote desirable cultural values in a changing world.

"Sec. 3. *Statement of Objectives.* To this end the educational system aims to:

- A. Provide for a broad general education that will assist each individual in the peculiar ecology of his own society, to (1) Attain his potential as a human being; (2) Enhance the range and quality of individual and group participation in the basic functions of society; and (3) Acquire the es-

- essential educational foundations for his development into a productive and versatile citizen.
- B. Train the nation's manpower in the middle level skill required for national development;
 - C. Develop the high level professions that will provide leadership for the nation's advance knowledge through research, and apply new knowledge for improving the quality of human life; and
 - D. Respond effectively to changing needs and conditions of the nation through a system of educational planning and evaluation. "A careful reading of the goals and objectives suggests the need and importance of geography in the attainment of these goals and objectives. As an example take the first objective. "Provide for a broad general education that will assist each individual in the peculiar ecology of his own society. . . ." This objective cannot be attained unless interrelations between living things and their surroundings (which is an aspect of geography) are studied. Another example is the first national development goal: "To achieve and maintain an accelerating rate of economic development and social progress." This goal can be achieved only on the basis of thorough knowledge of geography."

GEOGRAPHY AND ECONOMIC DEVELOPMENT

It is now clear that geography is relevant to economic development. If more illustrations are needed to stress the point, the following quotations from the draft report of the Technical Committee conducting midterm evaluation of the Four-Year Development Plan FY 1974-77 and upgrading the second half of the plan will suffice:

"A fundamental objective of the current thrust in the development of regions is to effect equity of opportunity for each region to exploit its full potential with respect to its demographic, economic, social, political and environmental resources.

The strategy for development is multi-dimensional but organically inter-linked. It calls for increased intra- and inter-sectoral linkages, an emphasis on the utilization of human capital, a better spatial distribution of economic opportunities and growth and, as a corollary to the three, more efficient utilization of financial and physical resources. That geography is a component of the strategy does not call for further elucidation.

REGIONAL DELINEATION

The regional delineation of the country into twelve regions has been based on five considerations, one of which is physical characteristics or geographical factors. What are these twelve regions?

- Region No. 1 — Ilocos and Mountain Provinces
- Region No. 2 — Cagayan Valley
- Region No. 3 — Central Luzon

- Region No. 4 — Southern Tagalog Provinces
- Region No. 5 — Bicol Provinces
- Region No. 6 — Western Visayas
- Region No. 7 — Central Visayas
- Region No. 8 — Eastern Visayas
- Region No. 9 — Western Mindanao
- Region No. 10 — Northern Mindanao
- Region No. 11 — Southern Mindanao
- Region No. 12 — Southwestern Mindanao

A closer look at these regions reveals their peculiar characteristics, one of which is their geographical identities.

The state of development of the regions vary. Based on the 1973 GNP of P37,636 million, Region No. 1 contributed P2,082 million; Region No. 2 P815 million; Region No. 3 P3,316 million; Region No. 4 P16,799 million; Region No. 5 P1,329 million; Region No. 6 P3,699 million; Region No. 7 P2,423 million; Region No. 8 P1,045 million; Region No. 9 P1,130 million; Region No. 10 P2,240 million and Region No. 11 P2,755. These apportionments are based on the original eleven regions.

STRATEGY FOR REGIONAL DEVELOPMENT

The basic strategy for regional development is focused on the development of the rural areas. This means, the expansion of agriculture to achieve self-sufficiency and surplus for export. Agriculture is the corner-stone of economic development in all regions. But not all regions are endowed with rich agricultural potential. Therefore, pending the development of the Cotabato Agusan River basin, the national strategy will be to rely heavily on Central Luzon for its rice supply. In order to decongest Manila, the industrialization of parts of Central Luzon and Southern Tagalog Regions is indispensable until such time as Northern Mindanao, Central Visayas and Bicol Regions can rival and polarize the individual growth of Metropolitan Manila.

At this juncture a brief geographical sketch of each region will be considered.

The Ilocos Region is preponderantly agricultural to the extent of 20 percent of its GNP (1973 figures) tobacco, corn, palay, vegetables, rootcrops and livestock are the leading agricultural products. Inland and sea fishing is rather common. Mining gold and copper is an important industry. The region is known for its thriving cottage industry. Beautiful spots abound.

The Cagayan Valley Region is highly agricultural with agriculture contributing 63 percent of the GNP. The principal activities of the people are crop and livestock raising, and forestry. The thrusts to development are: (1) to increase rice production; (2) To expand livestock and poultry through dispersal of improved breeds; (3) To achieve self-sufficiency in fish by utilizing the potentials of the Pacific Ocean; (4) To process lumber into timber and furniture.

The Central Luzon Region is principally agricultural. It is the rice granary of the Philippines and in 1973 placed second in the production of sugar. Agriculture contributed 37 percent to the GNP. Cheap power is available and road network extensive making industrialization attractive. The expansion of tourism through the establishment of vacation resorts is a promising proposition.

The Southern Tagalog Region is the most industrialized region in the country. The average annual contribution of the industrial sector to the GNP is two and a half times that of the agricultural sector. Palawan, Marinduque, Romblon and Mindoro remain agricultural and underdeveloped. For this region the development thrusts should be the continued industrial growth of Metro Manila; improved communication and transportation; the solution of traffic congestion and environment pollution; the expansion of agriculture in the inland provinces and the development of Tagaytay City, Pagsanjan Falls, and other tourist spots.

The strategy for the development of Bicol Region revolves around its vast agricultural lands and mineral resources. The development of the geothermal power in Tiwi, Albay will speed up industrialization. Small cottage industries, fishing and food production are the chief industries. Secondary industries will center on the manufacture of agricultural implements, paper mill, wallboard plant, soap and cosmetic plant, ice and cold storage, bone charcoal and bone ash plant, horn and hoof glue plant. Tourist spots capped by Mayon Volcano abound.

The Western Visayas Region, although agricultural, manifests a strong potential for industrial growth along food processing. The region is largely a sugar and rice producing area. Fish, vegetables, fruits, coconuts, livestock and poultry are abundant. The development thrusts should be in maximizing backward and forward linkages with agriculture; in research on the expanded uses of the product and waste of sugar and coconut industries; in the exploration of fish grain and fruit processing ventures; in the harnessing of its geothermal and hydroelectric potential; in the fuller utilization of mineral deposits; in the establishments of cottage industries and in the development of tourism.

The development of Central Visayas Region shall be propelled by the growth of Cebu as an industrial and commercial complex. The total flow of cargoes and passenger is considerable. The relative share of the non-agricultural economy to the GNP is 50 percent. Cebu is a service center for planes and ships.

The thrusts of development should be in shipbuilding and related industries, in the extraction of mineral deposits of which Cebu has 31 percent of the national deposits in copper, 59 percent of gold, 5 percent of iron and 81 percent of clay; in the manufacture of pottery, china earthenwares, and structural clay products; in the development of tourism; in the production of most of its food requirements including corn, bananas, mangoes, grapes, livestock; and in the development of the cotton industry.

The economy of Eastern Visayas Region rests heavily on the agricultural sector the share of which in 1973 was 55 percent of the GNP. Production is defi-

cient because of traditional cultivation methods. Rice, coconuts, vegetables, root crops, sugar cane and abaca are produced. The region has vast forest resources. Fish abounds. Geothermal potentials are available. There are many historical landmarks for tourism. The thrusts of development should be in the improvement of agriculture; in the development of tourist attractions; and infrastructure facilities.

The development of Western Mindanao will center on rehabilitation and reconstruction to achieve normalcy — a situation conducive to the development of its rich natural resources and its overall socio-economic growth. The increased production of primary products is urgent. A rural-growth strategy to involve large segments of the population is desirable. Social and economic overhead investments should be directed toward the rural-center places and the small and medium scale industries. Rural electrification and storage facilities are implicit considerations. Increased output specializations — rice, corn, coconut, pou'try, livestock — should be counter-balanced by marine and aquatic resources. Rubber, abaca, bananas and other fruits should be developed. The development of large industries shall minimize the utilization of indigenous materials. Tourism development should occupy a priority.

The Northern Mindanao Region is blessed with big tracts of agricultural lands, pasture lands and forest areas, vast reserves of mineral resources, rich fishing grounds and potential power resources. The major agricultural outputs are rice, corn, pineapples, coconuts and abaca. Two-thirds of the forests are commercial. Of the mineral deposits, nickel, iron, copper and cement have high potential. Fishing grounds remain to be exploited. The region have high potential for cheap power.

Southern Mindanao is essentially agricultural. Agriculture leads all sectors. The major agricultural products are bananas, copra, pineapples, corn, rice, sugar cane, coconut and rubber. The region is endowed with rich natural resources such as forests, nickel, ore, manganese reserves, and swamplands. The region's industrial strategy is the development of Davao City as primary growth center which means the development of medium and large industries to process bananas, copra, pineapples, coconut, logs, sugar, corn, palay, and the smelting of aluminum.

GENERAL STATEMENT

Geography lies at the very core of national development, particularly in economic development. Without geography, economic development will be hampered because of lack of data on location, communication, climate, natural resources, plant and animal life and their inter-relationships with the result that effective economic planning and development will be difficult if not impossible. This implies that the place of geography in educational program should not only be assured but correspondingly strengthened as national development steadily moves forward.

OPEN FORUM

QUESTION:

Is Geography taught in our schools today?

ANSWER:

Yes, but instead of teaching it as a separate subject it is integrated in Social Studies from Grade III to Grade IV. There is a problem here. If a teacher is prejudiced against geography she will not give the subject the attention it deserves. To teach by integration one is expected to bring related matters together as a whole. Our teachers are not efficient in teaching by integration. If our educational program is to be well implemented, our teachers should be updated in contents and retained in the technical of teaching by integration.

There is another reason why the teaching of geography leaves much to be desired. We have not yet fully recovered from the effects of the last war in terms of facilities, textbooks and equipment for teaching geography because of limited resources. Not all schools are adequately equipped and supplied for geography teaching.

QUESTION:

Why is it that before students were punished if they spoke the dialect in schools and school premises?

ANSWER:

When the Americans arrived in the Philippines they found that the Filipinos were not united. We wanted one dialect to be the language of unity but regional prejudices cropped up. In the 1934 Constitutional Convention a provision was included whereby steps should be taken to develop a common national language based on one of the existing languages. Our desire to have a language of unity antedated the 1935 Constitution. Since there was a need to unify the people and no dialect could fill the need, the Education Act of 1901 contains a provision that English, should be used as a medium of instruction as soon as practicable. In their desire to have us learn the language without delay, the Americans used some repressive measures and one of them is fine.

QUESTION:

How is geography taught today?

ANSWER:

As I stated before, we started the formal teaching of geography in Grade III and continue to Grade IV. We integrate geography in Social Studies instead of teaching it as a separate subject. In Grades I & II, geography is taught incidentally. Teaching incidentally means teaching it when the proper psychological moment comes, while teaching other subjects. In Grade III formal instruc-

tion begins. The spiral method is used. First, home geography is taught, then geography of the community, then the nation and finally the world as a whole.

QUESTION:

There has been a plan for the development of the area within 30 km. radius from Manila. What I am wondering is with that radius we have also a numerals of agricultural areas. Now, what is really the plan for this?

ANSWER:

What I know is that in order to decongest Manila no factories will be established with a stated radius from Manila. No doubt human settlement will be established in this area. As to details, I have not much information.

QUESTION:

You said something about Filipinos being lazy. Will you state the factors why the Filipinos are lazy?

ANSWER:

Have you read the immortal essay of Rizal entitled "The Indolence of the Filipinos?" Rizal discussed the following causes extensively and intensively:

- | | |
|--|---|
| 1. the warm climate | 9. trade with the Chinese |
| 2. frequent wars | 10. gambling |
| 3. more piracy | 11. the low regard for labor |
| 4. absence of freedom | 12. too many fiestas |
| 5. labor was not encouraged | 13. ownership of big landed estates by Friars |
| 6. banditry | 14. the feeling of inferiority |
| 7. the miserly returns of labor | 15. deprivation of human dignity |
| 8. conflict of interest of the Filipinos and Spaniards | |

QUESTION:

Do you mean to say it is determination that can solve the problem?

ANSWER:

Fundamentally, plus encouragement by the government.

—oOo—

IF YOU SEE ONE RAT, COUNT TEN

This is an article of geographic significance, published in the Organic Gardening and Farming, December 1975 by Gene Logsdon. It is a very interesting revelation of an experienced man full of common sense. Get a copy or subscribe to Rodale Press, Inc., 33 East Minor Street, EMMAUS Pa. 18049 U. S. A.

This is a good magazine for people with backyard garden or even small farm of one to seven hectares here in the Philippines.

— D. Z. ROSELL

25th
ANNIVERSARY GEOGRAPHY AWARD
Philippine Geographical Society
December 8, 1975

To have survived time by fourscore, seven years, one month and one day is achievement in itself;

To fill all these long years with achievements that cannot be attained by a dozen men with normal effort is a feat;

And to continue achieving long after one is said to have passed his most useful years is something worth emulation.

Something that the Philippine Geographical Society, on its 25th Anniversary, would like to point out for the nation and the world to admire . . .

A man who has attained these achievements, was

Born November 7, 1888 at the town of Unisan, Quezon just before the outbreak of the Philippine revolution against Spain,

Studied nature because he had seen God in nature,

Loved nature such that he learned all about forests in the Philippines, a knowledge which he painfully gathered and generously passed to generations that followed him,

Worked among the trees as a Forester, Professor and Dean of the College of Forestry, University of the Philippines.

Loved by the people who work with him and happy in the company of the Rotarians while spending his leisure hours on Thursday noon at the Coral Hilton Rotary luncheon meetings.

Commune with the trees, a man who is happiest when he is lost so to speak in the woods of albazia falcateria trees that he planted, nurtured as a mother nurses her children;

Trees that have made the concessions of the Philippine Paper Industries green with forest, not brown with denudation,

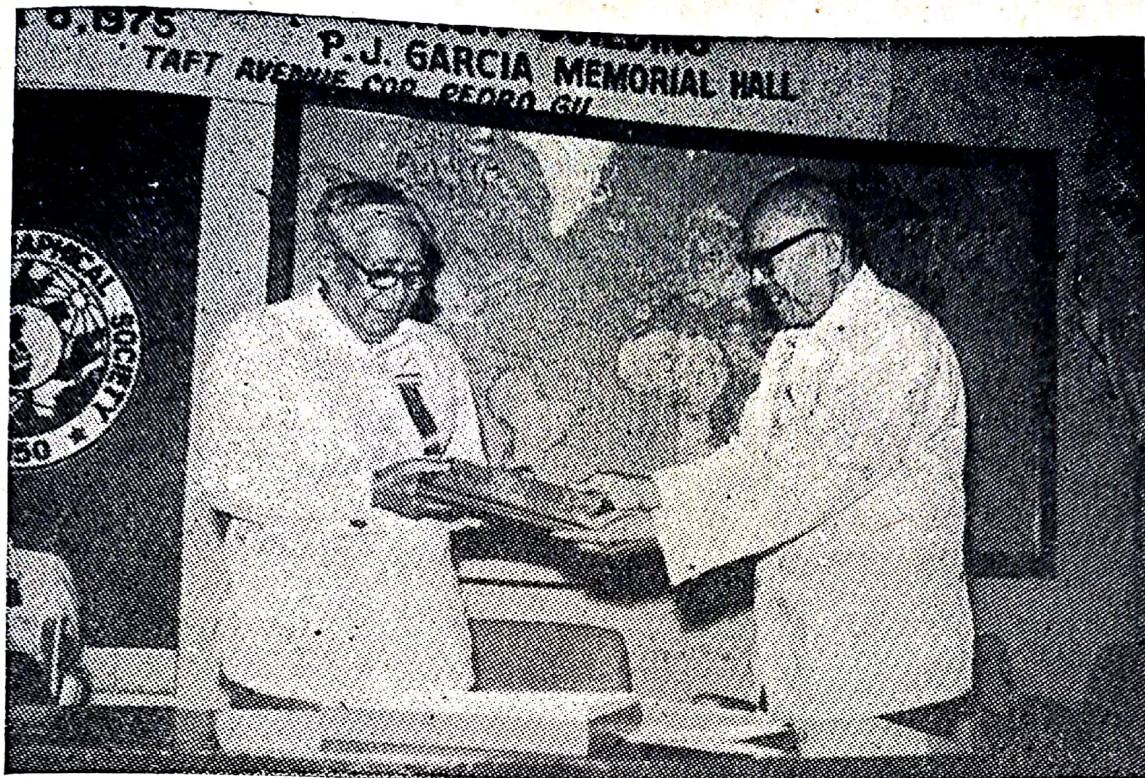
A man who has lived long and well;

A man who has left his imprint on our time and in times to come —

This man is FLORENCIO TAMESIS, retired Director of the Bureau of Forestry and Dean Emeritus, University of the Philippines, our 25th Anniversary Geography Awardee — 1975.

Director Artemio E. Gesmundo of Soils retired, will now read the citation engraved on the Award Plaque.

DOMINADOR Z. ROSELL
President, Philippine Geographical Society



DEAN EMERITUS TAMESIS RECEIVING THE 25TH ANNIVERSARY GEOGRAPHY AWARD FROM PRESIDENT DOMINADOR Z. ROSELL.

25th ANNIVERSARY GEOGRAPHY AWARD
to
FLORENCIO TAMESIS

1. General Manager of Nasipit Lumber Company, Inc.
Philippine Wallboard Corporation, Anakan Lumber Company and Woodland Realty Corporation
2. Date and Place of Birth: November 7, 1888 Unisan Quezon
Married to Silvina Valero with 8 children
3. Residence Address: 21 Macopa St., Sta. Mesa Hts., Quezon City
Telephone Number: 60-17-50
4. Educational Background: (1) UP School of Forestry-Ranger 1912
(2) University of Washington, College of Forestry, U.S.A., BSF 1922
(3) University of Washington, College of Forestry, U.S.A., MSF 1923
5. Area of Specialization: Timber Utilization and Silviculture
6. Started as Asst. Ranger, 1907 to 1912 and promoted to Director of Forestry and Ex-Officio Dean, UP College of Forestry — 1946-1953
7. Member UP Board of Regent — 1957 to 1964

8. Awards Received (1) Distinguished Forestry Alumnus — 1953, (2) Presidential Award for Most Outstanding in the Field of Public Service — 1953, (3) Diploma of Merit as Distinguished Alumnus, University of Washington, USA — 1954, (4) Father of the Year — 1956, UP Women's Club, (5) Outstanding UP Alumnus of the Year, College of Forestry — 1957, (6) Golden Heritage Medal — 1968, (7) Philippine Forestry Research Society Award in Recognition of Outstanding Leadership and Interest in Forestry Research — 1972, (8) Molawin Award for Most Outstanding Individual Achievement in Forestry — 1972.
9. Research Works and Publications: Over 100 articles and researches published in recognized publications; three of these researches appeared in the Philippine Geographical Journal.
10. Member in 18 professional and learned societies, including National Research Council of the Philippines, PHILAAS, Inc., Philippine Geographical Society, Phi Kappa Phi, UP Chapter, Gamma Sigma Delta, UPLB Chapter.

—oOo—

NATIONAL COMMITTEE ON GEOGRAPHICAL SCIENCES

National Science Development Board

Publication of the Descriptive Atlas of the Philippines

The National Committee on Geographical Sciences (NCGS) NSDB has made the proposal to publish the Descriptive Atlas of the Philippines. The implementing agencies are the members of the Committee, namely:

University of the Philippines, College of Arts and Sciences; Bureau of Soils; Commission on Volcanology; National Irrigation Administration; Bureau of Mines; Philippine Atmospheric, Geophysical and Astronomical Services Administration; Bureau of Forest Development; Department of Agrarian Reform; National Census and Statistics Office; Bureau of Coast and Geodetic Survey; and Philippine Geographical Society.

The publication of the Descriptive Atlas of the Philippines will provide a wealth of information regarding the geography and natural resources of the country. Included also in this atlas are: Man and his number, cultural groups, cultural institutions, the work of man such as his settlements, his economics, transportation, communication, and the energy resources and their development. The significance of this project therefore, is that when finished and published, it will provide information of the country in a nutshell. So far, no Atlas of this kind has been published in this country.

The funding of this project will be provided by the National Science Development Board and partly by financial assistance from the Filipinas Foundation, Inc.

CULTURAL DIVERSITY AND ECOLOGICAL STABILITY¹

by

MELITON B. JUANICO

INTRODUCTION

The Industrial Revolution marked the start of the large-scale disturbance by man of the egg-shell delicacy of the global ecosystem through the use of science and technology. It was the time when man, particularly Western man, began to control vast resources of energy initially in the form of coal, thereby putting him abruptly for the first time in his brief history in a position to make pervasive alterations on the earth's lithosphere, hydrosphere, and atmosphere. For a variety of cultural motivations, Western man has kept on developing a myopic technology that has failed to take into account its undesirable effects on the stable functioning of an interrelated web of physical, chemical, and biological processes created and maintained by a diverse variety of living things on earth.

Presently, Western technology permeates all corners of the globe, spreading its pollution and jeopardizing not only the quality of life in the environment but the very survival of life itself. In the face of this, this paper would like to point out the necessity of temporarily slowing down this bulldozing Westernization and adopt the idea of maintaining the diversity of cultures around the world in the meantime that the complex interrelationships of many types of ecosystems are still being comprehended. The promotion of cultural diversity, which is made possible when less developed non-Western societies are allowed to mechanize in their own style and pace or even when these societies practically reject Western technology, may provide one way of promoting the diversity of species in the terrestrial biotic community, a diversity which is responsible for the stability of life in the planet. Cultural diversity may be promoted through the overall change in the basic cultural assumptions of both industrialized and non-industrialized societies especially with regards to technology or it may be maintained through the adoption of what is called simplified technology.

BIOTIC DIVERSITY AND ECOLOGICAL STABILITY

There is an increasing body of evidence proving that equilibrium of an ecosystem depends closely upon its degree of complexity or upon the varied network of dynamic equilibria that it contains. The indications are that species diversity normally means ecosystem stability, just as a diversified national

¹ Research paper submitted in partial fulfillment of the course requirements of Geography 226 (Cultural Geography) under Dr. Telesforo W. Luna, Jr., Department of Geology and Geography, University of the Philippines System.

economy promotes stability. The more species there are in a biotic community the greater the adaptive opportunities amidst changing conditions. As Odum (1971:149) says, "Higher diversity, then, means longer food chains and more cases of symbiosis (mutualism, parasitism, commensalism, etc.) and greater possibilities for negative feedback control, which reduces oscillations and hence increases stability." Bates (1964:73) concurs, saying that with diversity there is tighter population control, reducing the likelihood of occurrence of population irruptions that may disturb or destroy an otherwise simple ecosystem. The "balance of nature" is maintained in a diversified system because of the numerous opportunities for compensation or substitution.

Stated in another way, a diversified ecosystem is a generalized ecosystem, i.e., one which contains a great number of species, each species being represented by a small number of individuals. Contrasted to this type of ecosystem is the specialized one, in which the number of species are few while the individuals comprising each of the species are many in number. These relationships are expressed in a diversity index, which is the ratio of the number of species to the number of organisms found in a biotic community. A generalized ecosystem therefore has a higher diversity index than a specialized one (Geertz 1963:167-168).

It is this diversity, this fineness of the "web of life" that man, especially Western man, is rapidly altering with his technology. He is substituting ecological simplicity for complexity in a self-centered desire to produce more food and consumer goods. In agricultural production, for instance, he has tried to eliminate the competitive aspect of the biotic community by killing plants and animals that feed on his crop, in the process shortening the food chains (Bates 1964:71-72). In monoculture, because of the departure from complexity, crops must be supported by enormous amounts of organic fertilizers that are transported into inland waters and ultimately disrupt the nitrogen and oxygen cycles. Again, because a single crop can be destroyed by just a single species of insects, massive doses of insecticides are applied with the effect of disturbing surrounding ecosystems (Miller 1972:96).

The history of human interference. — The human intrusions into the ecosystems of the planet have been increasing in intensity and extent, dating back even to the Neolithic period, about 12,000 year ago, when man shifted in his activities from food collecting to food producing. Thus with the domestication of plants man altered the nature of his relations with other life forms by moving into the first level of consumers in the biotic pyramid on a scale much bigger than when he first discovered fire. At this period man also became a second-level consumer as he learned to domesticate animals and became not only a herbivore, but a voracious carnivore as well² (Bates 1964: 70-71). The shift in energy con-

² Conservationists view this state of affairs as a waste of energy, for man, instead of merely relying for sustenance on plants (producers) which are the primary source of energy, allows domesticated animals to use up also the same energy source. If man had not this massive culturally determined demand for meat he can save energy for the planet by consuming directly plant organisms instead of wasting much energy by raising animal domesticates in enormous numbers (Smith 1966:47).

sumption and its attendant transformation of the earth's landscape was made possible by the use of initially simple tools that ultimately increased in kind and number. With the help of technologies that were developed partly in response to the influences of the environment, man attained a position where he could produce food that exceeded his daily requirements under the hunting-collecting stage. He also learned how to store food and to transport them, thereby freeing himself from dependence on the resources of certain areas. These circumstances made possible the development of sedentary life and the mechanisms for increasing his number. People began to congregate in certain environmentally auspicious places that later evolved into what are now called cities. Thus was born the Urban Revolution 5,000 years ago following the Neolithic Revolution (Bates 1964:107). In the relatively abundant sedentary life of the city as well as of the countryside man was afforded more "leisure for reflection, experimentation, and discussion,"³ such that he was able to invent tools and improve his techniques to produce more food and to increase the amenities of daily living. In fact, according to Childe (1951:180), the two millennia immediately preceding the Urban Revolution (circa 3,000 B. C.) saw technological and scientific breakthroughs that benefited early civilizations.⁴

Then about 200 years or so ago, the Industrial Revolution occurred in Western Europe. This even enabled man to control the vast resources of power that lay hidden in coal and iron. Man's alteration of his relationship with the environment proceeded at a speed and scale unknown before in his brief history. There was rapid growth everywhere — in population, use of food supplies, minerals consumed, and in urbanization. The Industrial Revolution occurred as a result of the desire for more consumer goods initially among the inhabitants of Western European nation-states. The earlier mercantilistic system that involved risky trading gave way to an economic-technologic order that aimed at increasing the supply of goods at lower cost while at the same time widening demands — with profit as the overriding motive. From the impetus provided by such mechanical inventions as James Watt's steam engine, mass production of goods began with the establishment of labor-saving factories (Ward and Dubos 1972:13-29). Already oriented to the ethic of maintaining minimum costs in production, the "free enterprises" spawned a culture that placed emphasis on the efficiency and capability of science and technology. The creation of a worldwide market by Europe and America allowed the spread of the technological culture that tends especially now to substitute ecological simplicity for ecological diversity in the name of progress and economic development.

³ Carl Sauer (1952:21) avers that inventions are produced more in conditions of abundance and not so much in times of stress. Thus he says: "The saying that necessity is the mother of invention is largely not true. The needy and miserable societies are not inventive, for they lack the leisure for reflection, experimentation and discussion."

⁴ Childe (1951:180) cited the following fifteen "mutations" that were unified in the Urban Revolution: "artificial irrigation using canals and ditches; the plow; the harnessing of animal motive power; the sailboat; wheeled vehicles; orchard-husbandry; fermentation; the production and use of copper; bricks; the arch; glazing; the seal; and — in the earliest stages of the Revolution — a solar calendar, writing, numeral notation, and bronze."

THE CASE AGAINST WESTERN TECHNOLOGY

The spread of Western technology, which has taken on the dimensions of what may be called cultural imperialism, has to be called in question. The desire for modernization, particularly industrialization, has found its way into the value systems of less developed nations, starting from the days of colonization when the colonial powers wittingly or unwittingly introduced, through the educational system they transplanted, new aspirations based on technological capability. The desire to imitate Western advance has been reinforced by an increasing worldwide network of communications as well as by easy and rapid travel. Westernization is a worldwide process that most often involves what Beals and Hoijer (1971:601; 603) call superordination-subordination situations where there is only a one-way flow of innovations. Thus in its contact with less developed societies Western culture may hold a superordinate position through the use of any one or a combination of "naked force, economic pressures, much greater size or technological superiority, or prestige accorded by the subordinate society." When industrialized societies provide technical aid even with the best of intentions it is with the assumption that goals, values or system of means are to be measured in terms of their cultural configurations. Yet the technical methods they espouse may function only with the combination of a set of interrelated factors like "widespread literacy and mechanical knowledge, specialized production facilities, laboratories, land systems, and economic conditions."

So in nations desiring to develop, highly evolved forms of industry are being introduced rapidly, with the misguided assumption that the importation of Western science is the only avenue to development.⁵ The grafting of Western technology into non-Western cultures is not without its disruptive effects on social and ecological relationships within the receiving society. Concentrating more now on ecological dislocations, Western ideas of development based on industrialization are being spread and accepted with the least discrimination or caution all over the world. But the technology borrowed is aimed only at satisfying increasing consumer demands and does not include ways and means of dealing with the deleterious waste of production. Thus the imported technology, according to Goodman (1970:109), aside from disrupting way of life, fomenting tribal wars, accelerating urbanization or developing an idle elite, also brings with it unmanageable pollution problems which are only dimly perceived in the mad rush towards economic development. The unprecedented enormous amounts of effluent that the borrowed technology produces place a heavy strain on the technological means and economic capacity of less developed societies, for it is only the developed countries that can afford their mess and perhaps deserve it. As Ward and Dubos (1972:11-12) says, even though only a third of humanity has entered the technological age, signs of the deterioration of the equality of the environment are already apparent. They further ask:

⁵ This attitude is also implied in the recommendations international agencies or advisers make for underdeveloped countries. And recommendations are easily accepted especially since the success of technological solutions are immediately apparent to local planners while the long-term effects are not (Black 1970:17).

But suppose seven billion try to live like Europeans or Japanese? Suppose they seek American standards of automobile use and add the emission of three and a half billion cars to the carbon monoxide in the air and the lungs? Suppose three-quarters of them move to the cities seeking there the developed world's levels of energy use and materials consumption? . . . In that case, what "gives" on the collision course? Numbers? Yes — but whose? Consumption? Yes — but where? Urban amenities? Yes — but in which lands? Energy slaves? — Yes — but not mine.

CULTURAL DIVERSITY

As a controlling and standardizing technosphere is imposed by power and money all over the world, the time is ripe for taking stock and introduce new corrective technological and cultural viewpoints, the present predisposing period probably being comparable to that of the Proto-Neolithic in southwestern Asia and to the environment in England before the birth of the Industrial Revolution (Jacobson 1970:330). The idea of maintaining cultural diversity should be stressed at this stage of human history, just as the need for biotic diversity is being stressed by the biological sciences. Only with a diversity of cultures will the present diversity of plant and animal life be temporarily guaranteed meanwhile that science is still trying to catch up with the effort to understand fully the determinants of a stable overall global ecosystem. The maintenance of cultural diversity involves allowing non-Western societies to change according to their unique cultural patterns and at their own comfortable pace. Or less developed societies may resist the temptation to use every novel device especially on a massive scale without analyzing its repercussions or without giving proper weight to ecological factors. It means, especially for less advanced Third World countries, not totally subscribing to a culture pattern that places a high value on culture change in technological and material things. For sure, this statement cannot avoid causing raised eyebrows in a planner from an underdeveloped country, for technology, admittedly, has its immense short-term benefits especially in the face of ubiquitous Malthusian furies. However, to reiterate, Miller (1972:96) says that the ways of handling the harmful side effects of modern technology are far from being perfected and this is because the interrelationships of the different smaller ecosystems in the globe are only dimly understood.

The intuitive and non-intuitive cultural types. — In the dilatory process arrived at through the promotion of cultural diversity, there is a need here to appreciate what is called the non-Western intuitive type of culture vis-a-vis the Western non-intuitive culture. In the first type, people have an intuitive comprehension of their surroundings and their intuitive body of knowledge and values are very much part of their perceptual and behavioral environments. They act in consonance with what they perceive are nature's laws and, considering themselves to be part of but not above nature, they suffered less conflicts and see no need for the frenetic inquiry into more discoverable truths and power hidden in nature. Non-technical man is content, so to say, to live in harmony with nature, striving to maintain the balance in it. Thus in certain Asiatic cultures the earth

is "Mother Earth" — all embracing and life-giving, and to take back something from her without recompense is immoral or disruptive (Thomas 1956:1106; Northrop 1956:1055-1060).⁶ We see this idea implicit in the Hindu cyclic conception of the universe. Man is part of the cyclical process of nature as are plants, animals and even the Hindu gods and goddesses. Under the Hindu Law of Karma all life is an integrated whole — all are links in the endless chain of birth, death and rebirth in the universe⁷ (Mahadevan 1967:159-160). This oneness of man with nature is also exhibited in the attitude of *ahimsa* in Jainism, an attitude that is characterized by the avoidance of physical injury to or killing of living organisms (Zimmer 1951:250, 278-279). This belief in *ahimsa* and in cyclical metempsychosis makes understandable the animistic worship of the Ganges, monkeys, serpents, and, above all, the cow.

The Western non-intuitive cultures, on the other hand, had initially a fundamental set of intuitive knowledge, but upon this they began to postulate axioms, hypotheses or mathematically constructed concepts. Whereas non-technological man will merely describe the phenomena he perceives in nature, technological man will take these impressions as data from which relationships may be formed through deductive logic. The relationships make up the hypotheses, theories or laws which are the tools for predicting phenomena in nature. Man understands nature coldly through "axiomatically, mathematically conducted concepts," and not anymore through the elemental "intuitive inductive concepts." Man has dissociated himself from nature and from an ethical norm centered in the daily affairs of tribe and family (Northrop 1956:1053-1054; Thomas 1956:1106-1108). From a mathematically constructed concept of the universe, therefore, it is not hard for technological man to view the physical environment as an object to manipulate and control as his whims dictate. This anthropocentric stance has also been explained by many writers as the influence of the pronouncement of the Old Testament that creation was a gift of God to man, to be used by him; but this use presently mean exploitation, manipulation and even destruction.⁸ Others see this attitude as a product of Descartes' doctrine of dualism, which considered man alone as having the capability of thought and other lower animals as nothing more but automations (Ferkiss 1969:39-40; Paradise 1971:78). Or one can even go further interpretation to Greek thought, much of which influenced Judeo-Christian philosophy. Western man may be said to act out presently the Prome-

⁶ One of the agricultural manifestations of this idea is in the practice of the primitive Asian Swidden farmer (shifting cultivator) as he plants a patch of upland to different crops in a random fashion and leaves it to fallow for a number of years (Fisher 1964:70-72). As Conklin (1962:463) observes, the shifting cultivator sometimes knows more about the interrelations of natural as well as cultural processes than is supposed by ethnocentric temperate zone writers.

⁷ This is referred to by religious writers as *samsara* or metempsychosis.

⁸ See the Old Testament, Genesis, Chapter I, Verses 26-28. Verse 28 particularly expresses this mandate, thus:

...Be fruitful and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.

It appears now that people have skimmed over the phrase "replenish the earth" and have only selectively read "and subdue it."

thean symbol, for like Prometheus who dared the gods' wrath by teaching man civilization (especially the use of fire) and the arts (Bulfinch 1959:20-21), modern man in the same spirit is constantly striving to unveil the secrets of nature and put them at the service of his kind.

Technological simplification. — How is cultural diversity to be maintained in terms of a more specific *modus operandi* within the context of culture change meanwhile that ecological relationships are being understood? At the outset, it is of course unrealistic for an intuitive society to try to repel the encroachment of the dominant Western culture in the process of maintaining its integrity. The Western technologic-economic system has access to power and the most effective means of communication. For many societies, however, the optimum rates of cultural absorption have been surpassed, with social disruption setting in as a result of Western values corrupting traditional meaning systems. To achieve what might be termed planned variation of cultures is to resort to what Goodman calls technological simplification or simplification of the technical system (1970:108). Non-mechanical or semi-mechanical approaches may be employed. A good example of technological simplification is the use of "biological" methods of pest control in farming, rather than using chemical ones. When an exotic insect becomes established in a place and becomes a pest, parasites or predators that check its increase in the natural habitat are imported as a means of control. The live defenders work harder, at the right time and with specific targets. Another more ecologically sound biological control method would be the artificial breeding of plant strains that are resistant to insect, fungus or bacterial attack. These are also agricultural methods that do not favor the growth of pests such as for instance, the yearly or seasonal rotation of crops. A widespread campaign might be conducted in educating children to identify and destroy weeds in a region instead of teaching them how to use weedicides (Bates 1961:75; Goodman 1970:111). Or, in answer to the need for power, traditional folks may concentrate more on using windmills say to pump water instead of employing gasoline engines. Many more simplified techniques may be thought of which are cheaper and "cleaner" than the more sophisticated Western-invented machines.

Technological simplification, however, has to be used in relation to the unique goals and values of individual societies if diversity in cultural change has to be maintained (cf. Beals and Hoijer 1971:601, 631). This brings to mind what a group of international scientists who call their organization Intermediate Technology advocate. Recommending methods along the line of technological simplification, they argue that what is needed for developing countries are techniques that employ indigenous labor, resources, folkways and a teachable know-how, with the purpose of alleviating hunger and disease so that the natives can develop further in their own style (Goodman 1970:109) or at their own pace. As Beals and Hoijer (1971:631) say,

... It should be obvious that teaching people to farm with tractors will not be successful in their economy will not support

the purchase or maintenance of machines, if their landholding system is based on small plots farmed by gardening techniques, and if their social system in part revolves about the mutual exchange of labor. In such cases, improvement of agricultural techniques must begin on a non-mechanical basis. The introduction of new plants or of new techniques of tillage, fitted into what people already know and so presented as not to dislocate existing patterns of interpersonal relations, may be entirely feasible, and may produce far more useful results than premature attempts at mechanization.

Technological modesty should presently be the proper attitude and cooperation with nature should always be a good guide to action. There is a need to check the arrogance of contemporary engineers who dream of flooding Amazon River Basin, melting the Antarctic ice cap, or dig a sea level canal across the Central American isthmus (Paradise 1971:81). Perhaps the case of the Aswan Dam in Egypt should dramatize the ill effects of a grand transplantation of technology without prior exhaustive ecological studies. After its operation in 1964, firstly, the Dam interrupted the annual flow of fertile silt to the Nile valley such that the flood plains had to be enriched immensely with fertilizers. Also, the arrest of the flow of nutrient-laden silt into the Mediterranean has practically caused the collapse of the sardine-fishing industry, a rich source of protein for an undernourished region. Lastly, the year-round water supply within the irrigation system provided an ideal environment for the proliferation of snails that carry bilharziasis (or schistosomiasis), the dreaded disease that in 1972 affected over one-half of the population in certain areas of Egypt (Miller 1972:91).

So, what attraction is there in a technology the complexity of which has rid daily living of its satisfaction and creative opportunities? As Goodman says, there are smart devices for trivial functions, stressful processes for essential functions, and dislocation and impotence whenever the machine malfunctions because only an expert can repair it (1970:108). If mechanical devices have to be used, there should be more of those which emit minimal pollution and are simple in design for traditional folks to repair easily. Or there should be more of machines that have multiple functions in order to prevent the unnecessary clutter of single-purpose devices. Yet such highly specialized technology is being exported to less developed countries through a global commercial network or at the behest of technically uninformed bureaucrats and politicians. Only advanced countries can afford such complicated technology for they always have at hand (hopefully) the mental resources for dealing with the harmful effects of their system.

One favorable factor working for the promotion of cultural diversity is the fact that many non-Western cultures still value the stability of their customs and traditions and manifest this in rejective responses against great and rapid changes. It is common knowledge that traditional societies usually resist the introduction of modern farm techniques and that if adoption takes place it is only after continual and earnest efforts at attitudinal change. It would be unrealistic

to say that this resistance should be vigorously encouraged, but somehow a balance should be struck between feeding a population on one hand and helping promote ecological stability and preventing social disruption on the other.

CONCLUSION

The study of cultural relativism shows that changes, if they do occur, do so only at variable rates, such that there is no basis in Western experience for predicting what other cultures will appreciate and adopt or how they will change. The human race should not be molded into a unified Western blueprint for progress. As one author says, each society should have its own idea of progress based on indigenous needs. Perhaps real progress should not even lie in technological advancement and material growth but in the increasing ability to use with wisdom the tools of science (Lawless 1967:48). In fact, the idea of progress (as distinguished from beliefs in the perfectability of man, often associated with religious or philosophical doctrines) has been questioned in Western societies after World War I. The irony is that the idea is being propagated in "backward" countries when it is being increasingly doubted in the countries of its birth (Beals and Hoijer 1971:628-629).

In the face of the possible extinction of all life in the planet due to the present rate of pollution accumulation, both technologic and non-technologic man must resist the tendency to create a one-world technosphere. As Paradise urges, pressure should be applied more to industrialized societies regarding the assessment of the determinants of technology, its limitations and the direction of its development. There is a necessity for drastic changes in the culture, economics and politics of the technologically advanced countries (1971:83). To Allsopp, there is a need for drastic economic changes which can only be brought about within a controlled economy, and he cites socialism as having created institutions which could be adopted for the service of ecological needs (1972:104-105). For sure, whatever the ideological persuasion of a country or whatever the stage of its technologic-economic development, there is a need for substantial state interference in affairs that affect ecological equilibrium, especially so if it is considered that the alternative corrective means in the form of education and the mass media have been found to be ineffective in many instances.

Just as biological diversity is necessary for ecological balance, so too cultural diversity, as represented by various ways of transforming the earth's landscape, must be maintained to insure this biological diversity on which hinges the delicate planetary economic balance. This is in the meantime that man is still trying to understand the complex ramifications of the global ecosystem or until such time that he has gained wisdom on the use of power and technology.

REFERENCES CITED

- Allsopp, Bruce, 1972, *The garden earth: a case for ecological morality*. New York, William Morrow and Company, Inc.
- Bates, Marston, 1964, *Man in nature*. 1st ed. New Jersey, Prentice-Hall, Inc.
- Bates R. and H. Hoijer, 1965, *An introduction to anthropology*. 3rd ed. Los Angeles, University of California Press.

- Black, John, 1970, *The dominion of man*. Edinburgh, Edinburgh University Press.
- Bulfinch, Thomas, 1959, *Bulfinch's mythology: the age of fable, the age of chivalry, legends of Charlemagne*. Rev. ed. New York, Crowell.
- Childe, Gordon V., 1951, *Man makes himself*. New York, The New American Library of World Literature, Inc.
- Conklin, Harold C., 1962, *An ethnographic approach to shifting agriculture*. In *Readings in cultural geography*, Philip Wagner and Marvin Mikesell, eds. Chicago, University of Chicago Press. pp. 457-464.
- Ferkiss, Victor C., 1969, *Technological man: the myth and the reality*. New York, George Braziller.
- Fisher, Charles A., 1964, *South-east Asia: a social, economic and political geography*. 2nd ed. London, Methuen & Co. Ltd.
- Geertz, Clifford, 1963, *Two types of ecosystems*. From *Agricultural involution: the process of ecological change in Indonesia*. California, University of California Press. pp. 12-37.
- Goodman, Paul, 1970, *Can technology be humane?* In *The ecological conscience*, Robert Disch, ed. New Jersey, Prentice-Hall, Inc.
- Jacobson, Daniel, 1970, *Man the chooser and mankind's most important choices*. *Journal of Geography* 69:326-331.
- Lawless, Robert, 1967, *Rethinking the concept of progress in the Philippine setting*. *The University of the Philippines Research Digest* 6:2.
- Mahadevan, T.M.P., 1967, *Social, ethical, and spiritual values in Indian philosophy*. In *The Indian mind: essentials of Indian philosophy and culture*, Charles A. Moore, ed. Honolulu, East-West Center Press. pp. 152-172.
- Miller, G. Tyler, Jr., 1972, *Replenish the earth: a primer in human ecology*. California, Wadsworth Publishing Company, Inc.
- Northrop, F.S.C., 1956, *Man's relation to the earth in its bearing on his aesthetic, ethical and legal values*. In *Man's role in changing the face of the earth*. William L. Thomas, ed. Chicago, The University of Chicago Press. pp. 1052-1067.
- Odum, Eugene, 1959, *Fundamentals of ecology*. Philadelphia, Saunders.
- Old and New Testaments, The (King James Version)*. New York, American Bible Society.
- Paradise, Scott I., 1971, *Technology and ecology: a debate bogged down in confusion*. In *Ecology: crisis and new vision*. Richard Sherrell, ed. Virginia, John Knox Press. pp. 78-83.
- Sauer, Carl O., 1952, *Agricultural origins and dispersals*. New York, American Geographical Society.
- Smith, Robert Leo, 1966, *Ecology and field biology*. New York, Harper and Row.
- Thomas, William L., Jr., 1956, *Man's self-transformation, symposium discussion: prospect*. In *Man's role in changing the face of the earth*. William L. Thomas, ed. Chicago, The University of Chicago Press. pp. 1088-1112.
- Ward, Barbara and René Dubos, 1972, *Only one earth*. Toronto, George J. McLeod, Limited.
- Zimmer, Heinrich, 1951, *Philosophies of India*. Joseph Campbell, ed. New York, Meridian Books, Inc.

FILIPINO AND INDIAN IMMIGRANTS IN DETROIT AND SUBURBS, 1961-1974

by

ALVAR W. CARLSON¹

Foreign immigration to the United States has increased since 1960 and the source areas of immigrants have changed considerably. Since the passage of the 1965 Immigration and Nationality Amendments which eliminated quotas based upon nationality, there has been a steady rise in the number of immigrants from the Republic of the Philippines and India.² Of the fifteen leading sources of immigrants to the United States between 1961-1967, the Republic of the Philippines ranked fourteenth by contributing two percent of all immigrants.³ During this time India was not in the top fifteen sources. It, however, ranked thirteenth as a source between 1968-1974 by contributing three percent of all immigrants.⁴ The Republic of the Philippines showed a dramatic increase between 1968-1974 when the country ranked third as a source and contributed seven percent of all the immigrants.⁵ In fact, Asia accounted for only ten per cent of the 2,135,300 immigrants to the United States between 1961-1967. Between 1968-1974, twenty-six percent of the 2,736,400 immigrants came from Asia.

Both Filipino and Indian immigrants are of growing importance in fashioning the population composition and cosmopolitan character of the Detroit, Michigan metropolitan area. The Detroit metropolitan area was the destination for approximately 2000 Filipino immigrants and 1500 Indian immigrants during the period of 1961 through 1974. Their combined number represented about seven percent of the nearly 50,000 immigrants who chose to reside in the Detroit met-

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² For additional information on recent immigration, see Alvar W. Carlson, "Recent Immigration, 1961-1970: A Factor in the Growth and Distribution of the United States Population," *The Journal of Geography*, 72 (December, 1973), pp. 8-18.

³ For discussions of Filipino immigration, see Charles B. Keeley, "Philippine Migration: Internal Movements and Emigration to the U.S.," *International Migration Review*, 7 (Summer, 1973), pp. 177-187; Monica Boyd, "The Changing Nature of Central and Southeast Asian Immigration to the United States: 1961-1972," *International Migration Review*, 8 (Winter, 1974), pp. 507-519; Monica Boyd, "Oriental Immigration: The Experience of the Chinese, Japanese and Filipino Populations in the United States," *International Migration Review*, 5 (Spring, 1971), pp. 48-61; and Alfredo N. Muñoz, *The Filipinos in America* (Los Angeles: Mountainview Publishers, 1971), 209 pp.

⁴ For other studies on Indian immigration to the United States and elsewhere, see Ralph R. Ireland, "Indian Immigration to the United States, 1901-1964: Retrospect and Prospect," *The Indian Journal of Economics*, 46 (April, 1966), pp. 465-476; Gary R. Hess, "The Hindu in America: Immigration and Naturalization Policies and India, 1917-1946," *Pacific Historical Review*, 38 (February, 1969), pp. 59-79; and Chandra Jayawardena, "Migration and Social Change: A Survey of Indian Communities Overseas," *Geographical Review*, 58 (July, 1968), pp. 426-449.

⁵ The Filipinos are reportedly the fastest growing ethnic element of population in the United States. Jack Rosenthal "1970 Census Finds Indians No Longer the Vanishing American," *The New York Times*, October 20, 1971, p. 26.

ropolitan area during this period. Almost ninety percent of the Filipinos and Indians who settled in the Detroit area came after 1967 (Table 1).

Table 1. FILIPINO AND INDIAN IMMIGRANTS TO THE UNITED STATES, 1961-1974.

	Filipinos (223,068)	Indians (87,353)
	Percent	Percent
<i>Females</i>		
Total, 1961-74	60	45
Arrived in U. S. 1961-67	15	10
Arrived in U. S. 1968-74	85	90
<i>Males</i>		
Total, 1961-74	40	55
Arrived in U. S. 1961-67	14	11
Arrived in U. S. 1968-74	86	89

Source: U.S. Department of Justice, Immigration and Naturalization Service

A number of questions are raised in this preliminary study concerning the settling processes of Filipino and Indian immigrants in Detroit and its suburbs (Figure 1). These questions include: (1) what are the immigrants' social and occupational characteristics; (2) do the immigrants settle in Detroit or in the near and distant suburbs; (3) do a significant number of each immigrant group cluster together to form ethnic concentrations; (4) do the Filipinos and Indians settle in similar areas and in the same areas; (5) do the immigrants settle near or within areas of dense Negro populations; and (6) do the immigrants settle in certain income areas?

DATA SOURCE

Much of the data on immigrants to the United States are confidential. However, the Petitions for Naturalization (Form N-405) are public records (Figure 2). These petitions are on file in the Clerk of Court's office in a Federal Court House. The data used in this study were extracted from 290 petitions filed between April 1, 1972 (300977) and April 1, 1975 (308662) in the Federal Court House in Detroit.

These were all of the petitions filed during this time by Filipino and Indian male immigrants who came to the United States sometime during the period of 1961-1974 and settled in the Detroit metropolitan area. Only petitions filed by males were used in this study to avoid duplicating statistics on the number of children per family and locations of residences. The locations of residences were plotted on maps of Detroit and suburbs by postal zip code areas. This procedure was followed by doing reconnaissance fieldwork in the metropolitan area.⁶

⁶ For studies of other ethnic populations in the Detroit area, see Carol Agoos, "Ethnicity in Detroit," *Ethnic Groups in the City*, edited by Otto Feinstein (Lexington, Massachusetts: D.C. Heath and Company, 1971), pp. 81-105 and David W. Hartman, Editor, "Immigrants And Migrants: The Detroit Ethnic Experience," *Journal of University Studies*, 10 (Fall, 1974), pp. 1-425 (published by Wayne State University in Detroit).

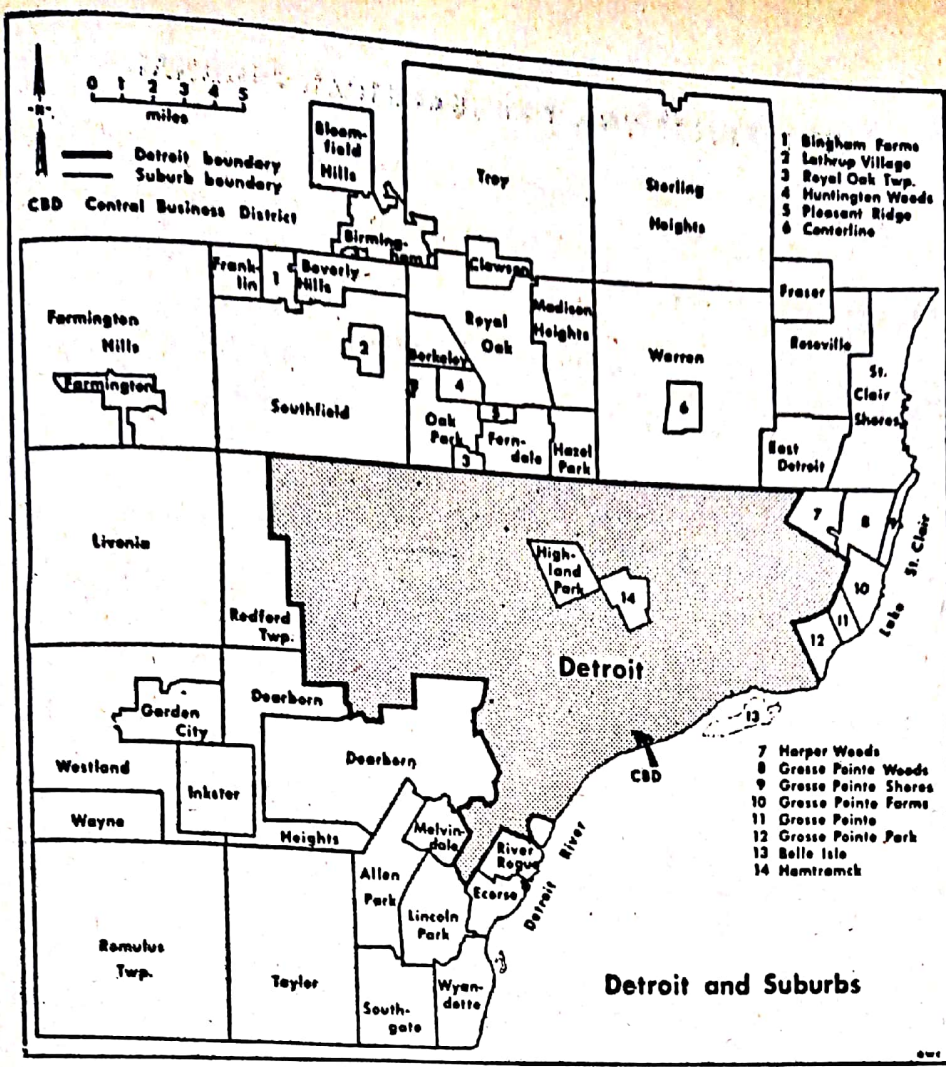


Figure 1. MAP OF DETROIT AND SUBURBS.

Table 2. OCCUPATIONS OF IMMIGRANTS, 1961 — 1974
India (87,353) Philippines (223,068)
 Percent Percent

	<i>India (87,353)</i> Percent	<i>Philippines (223,068)</i> Percent
Professional, technical and kindred workers	47	27
Farmers and farm managers	—*	—
Managers, officials and proprietors**	2	1
Clerical and kindred workers	2	3
Sales workers	—	—
Craftsmen, foremen and kindred workers	1	1
Operatives and kindred workers***	—	1
Private household workers	—	3
Service workers, except private household	1	2
Farm laborers and foremen	—	2
Laborers, except farm and mine****	—	1
Housewives, children and others with no reported occupation	46	58

Source: U.S. Department of Justice, Immigration and Naturalization Service
 * — denotes less than 1%.
 ** Managers, administrators, except farm.
 *** In 1974, includes categories of operatives, except transport and transport equipment operatives.
 **** In 1974, included laborers, except farm.

UNITED STATES DEPARTMENT OF JUSTICE
IMMIGRATION AND NATURALIZATION SERVICE

ORIGINAL
(To be retained
by Clerk of Court)

UNITED STATES OF AMERICA
PETITION FOR NATURALIZATION

No. 309939..

To the Honorable
The UNITED STATES DISTRICT Court of FOR THE EAST DIST. OF MICH. AT DETROIT
This petition for naturalization, hereby made and filed under section 316 (a), Immigration and Nationality Act, respectfully shows:

(1) My full, true, and correct name is RIO FLORES BALANCIO
(2) My present place of residence is 3017 Lakewood Detroit Michigan 48215
(3) I was born on APR 17, 1938 in San Edo Philippines
(4) I am married, and have TWO living children.
(5) I was lawfully admitted to the United States for permanent residence on April 28, 1970
(6) My present nationality is Philippines ALIEN REGISTRATION NO. A30 687 120
(7) I have not heretofore made a petition for naturalization.
(8) I pray that my name be changed to None

(continued over)

AFFIDAVIT OF WITNESSES

The following witnesses, each being severally, duly, and respectively sworn, depose and say:

(1) My name is Fortunato S. Sunga
I reside at 2523 Lakewood, Detroit, Mich.
(2) My name is Fernan F. Balancio
I reside at 3015 Lakewood, Detroit, Mich.

I am a citizen of the United States of America; I have personally known and have been acquainted in the United States with the petitioner named in the petition for naturalization of which this affidavit is a part, since at least Oct. 1, 1970; to my personal knowledge, based upon frequent observations and personal contacts with the petitioner within the State(s) of residence of the petitioner since said date, the petitioner has resided, immediately preceding the date of filing this petition, in the United States continuously since the date last mentioned; that the petitioner has been physically present in the United States for at least 31 months of that period; and that petitioner has been a resident in the State in which the petition is filed during at least the last 6 months. I have personal knowledge that the petitioner is, and during all such periods has been a person of good moral character, attached to the principles of the Constitution of the United States, and well disposed to the good order and happiness of the United States, and in my opinion the petitioner is in every way qualified to be admitted a citizen of the United States.

I do swear (affirm) that the statements of fact I have made in the affidavit to this petition for naturalization subscribed by me are true to the best of my knowledge and belief: SO HELP ME GOD.

Fortunato S. Sunga
(Signature of Witness)

Fernan F. Balancio
(Signature of Witness)

WHEN OATH ADMINISTERED BY CLERK OR DEPUTY CLERK OF COURT

WHEN OATH ADMINISTERED BY DESIGNATED EXAMINER

Subscribed and sworn to (affirmed) before me by above-named petitioner and witnesses in the respective forms of oath shown in said petition and affidavit, and filed by said petitioner, in the office of the clerk of said court at _____ day of _____ A.D. 1975

By _____ Clerk.
Deputy Clerk.

Subscribed and sworn to (affirmed) before me by above-named petitioner and witnesses in the respective forms of oath shown in said petition and affidavit at Detroit, Mich. this 2nd day of October A.D. 1975

Designated Examiner.

I HEREBY CERTIFY That the foregoing petition for naturalization was by petitioner named herein filed in the office of the clerk of said court at Detroit, Mich. this 2nd day of October A.D. 1975

HENRY R. HANSEN
Clerk.
By _____ Deputy Clerk.

(SEAL)

9944582

Form N-405 (Rev. 7-1-70)

Figure 2. AN EXAMPLE OF A PETITION FOR NATURALIZATION.

ated by females, especially within the age groups of 20-29 and 30-39 years of age (Figure 3). In contrast, the males comprised the majority of Indian immigrants to the United States during the same period (Figure 4). There were however, nearly an equal number of male and female Indian immigrants within the age group of 20-29 years of age. In fact, a greater preponderance of Indians was pyramid for the Filipinos shows a larger number of children, reflecting families, and more people 40 years and over than in the case of the Indian immigrants.

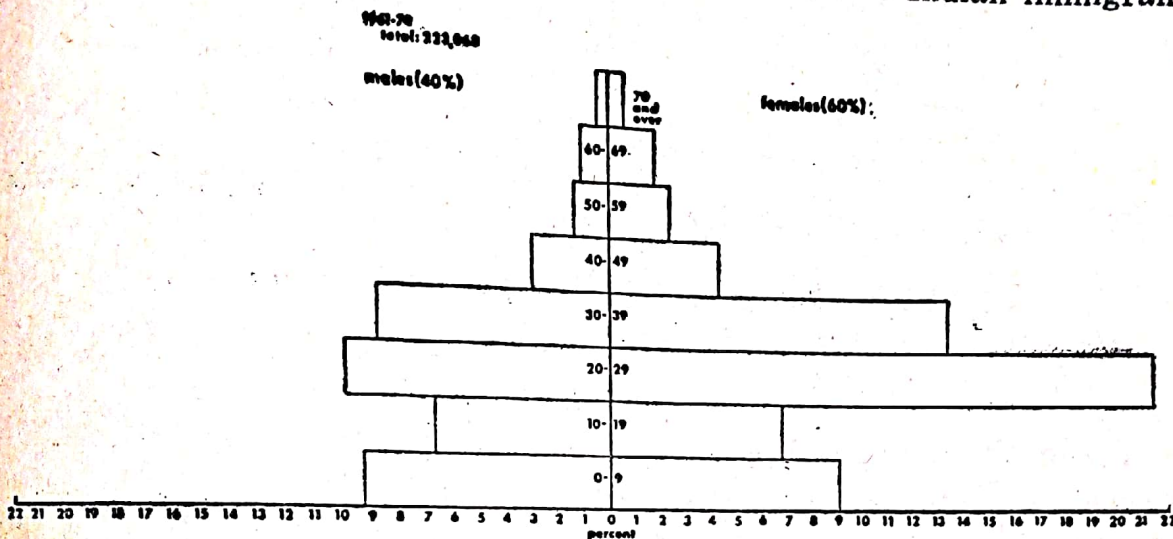


Figure 3. SEX/AGE PYRAMID OF FILIPINO IMMIGRANTS TO THE UNITED STATES, 1961-1974.

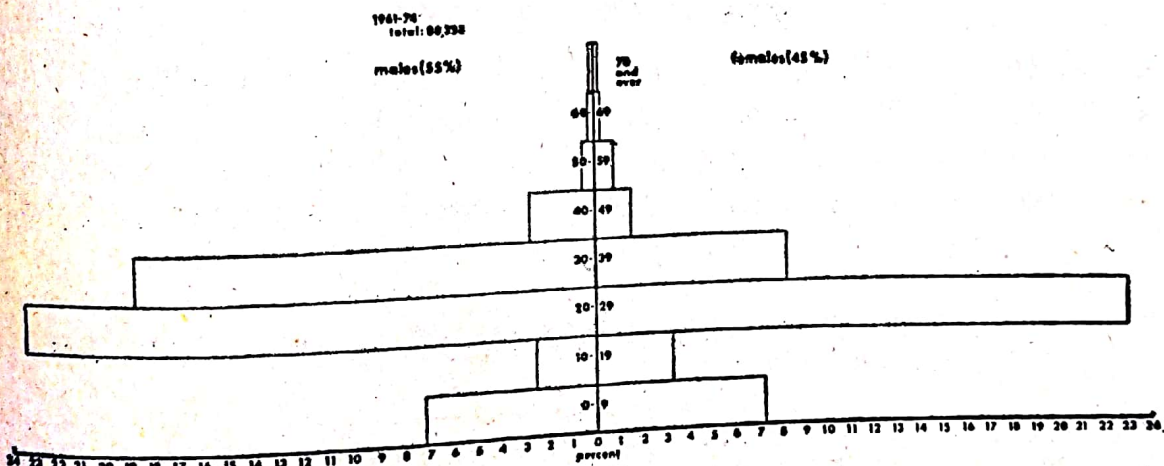


Figure 4. SEX/AGE PYRAMID OF INDIAN IMMIGRANTS TO THE UNITED STATES, 1961-1974.

In comparison, Filipino and Indian immigration is especially similar to that of the total immigration to the United States (Figure 5). The largest single age group in all three cases is that of the age group of 20-29 years.

The occupational characteristics of Filipino and Indian immigrants to the United States are indicated in Table 2. A large number of each group enters the United States as professional or technical personnel.

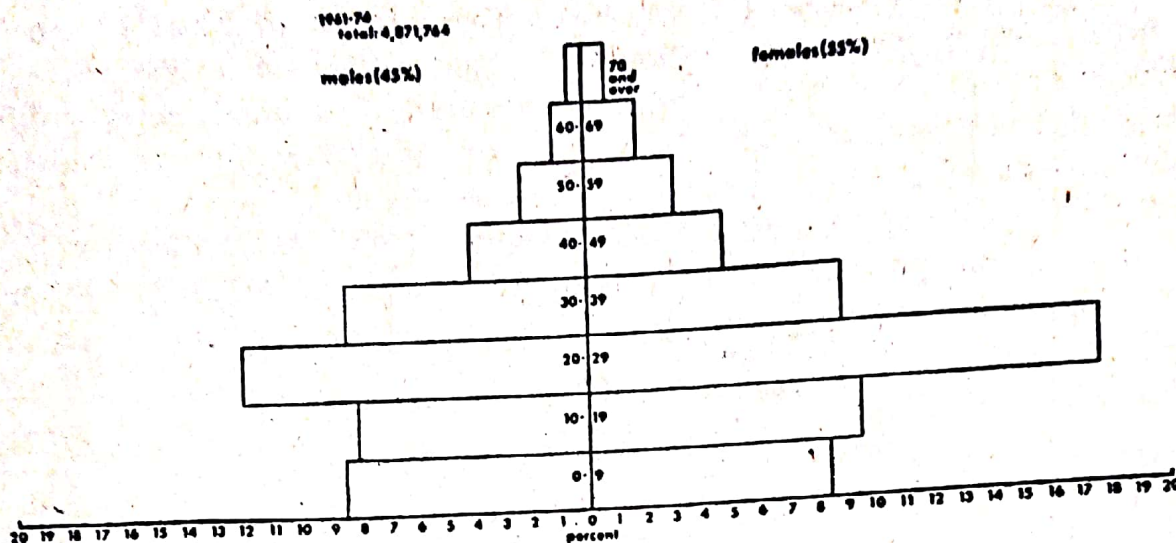


Figure 5. SEX/AGE PYRAMID OF TOTAL IMMIGRATION TO THE UNITED STATES, 1961-1974.

Data from the 290 petitions reveal certain social characteristics of Indian and Filipino male immigrants who settled in Detroit and suburbs (Table 3). The Filipinos were slightly older upon entry to the United States and had larger families at naturalization than the Indians. Both immigrant groups tended to become naturalized as soon as possible after the required five year period of residence in the United States.

IMMIGRANT SETTLING

Most of the 290 male Filipino and Indian immigrants settled in Detroit's suburbs (Table 3). The composite map of their residence shows that no one zip code area had a very heavy concentration of these immigrants (Figure 6). The map reveals, however, a tendency for the immigrants to locate in the more

Table 3. FILIPINO AND INDIAN IMMIGRANTS IN DETROIT AND SUBURBS, 1961-1974

Country of origin	No. of males	Ave. age at entry	Ave. age at naturalization	% with children at naturalization	Ave. number of children per family	% residing in Detroit and enclaves*
India	132	29.0	34.9	81	1.9	11
Philippine Islands	158	31.8	37.0	78	2.4	40

* Enclaves are Hamtramck and Highland Park
Source: Records in the Federal Court House, Detroit

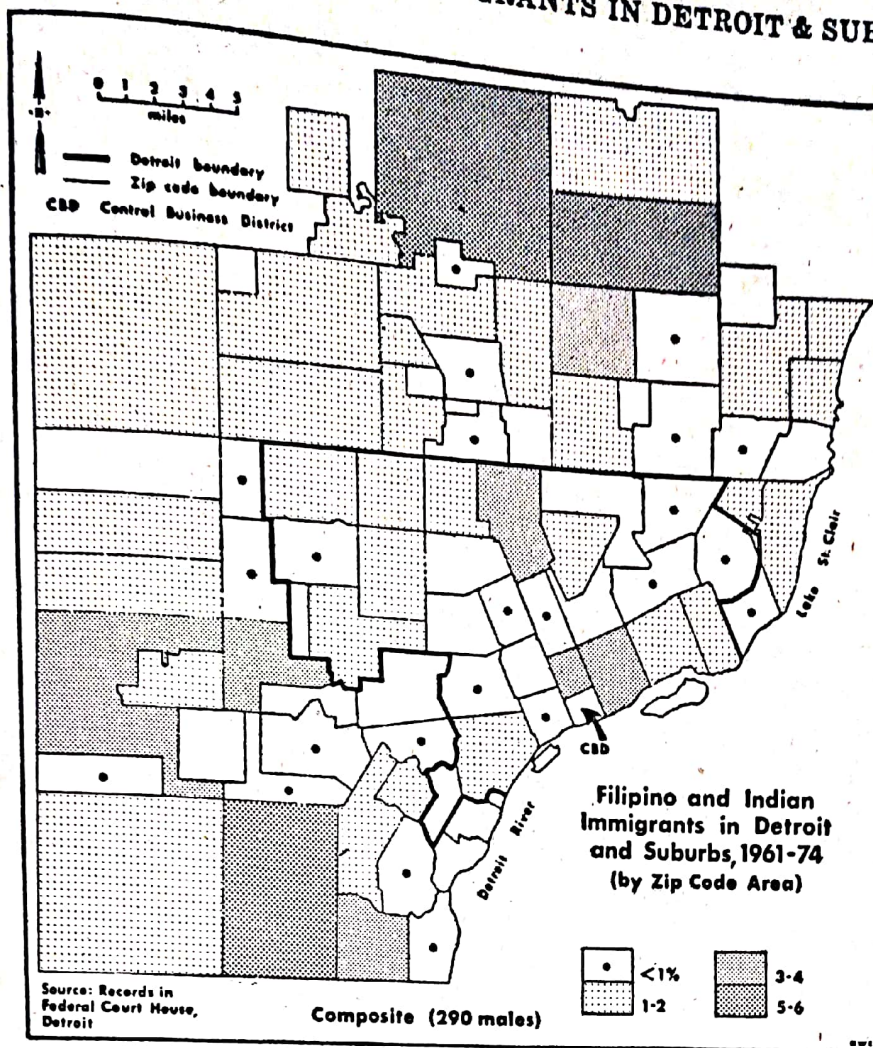


Figure 6. FILIPINO AND INDIAN IMMIGRANTS IN DETROIT AND SUBURBS, 1961-1974 (BY ZIP CODE AREA).

distant suburbs. Both groups obviously had preferential ideas about certain suburbs.

A further analysis of the locations of residences for the two groups reveals that there were some difference in their settling patterns. A significant difference is that forty percent of the 158 Filipinos resided within the city of Detroit and its enclaves (Highland Park and Hamtramck) whereas only eleven percent of the Indians chose to live there (Table 3). The Filipinos were found in more zip code areas than the Indians. Significant numbers of Filipinos resided in the suburbs of Westland and Troy as well as near Detroit's Central Business District (CBD) (Figure 7). Many of the Filipinos are associated with the medical profession.⁷ Consequently, there is a tendency to reside, often with spouses who are also employed in the medical professions, near hospitals and medical cli-

⁷ Concern has been expressed over the emigration of professional, especially medical, personnel from the Philippine Islands and other countries. Thomas L. Bernard, "United States Immigration Laws and Brain Drain," *International Migration* 8 (1970), pp. 31-35 and "Brain Drain Hits Manila," *The New York Times*, January 24, 1972, p. 54.

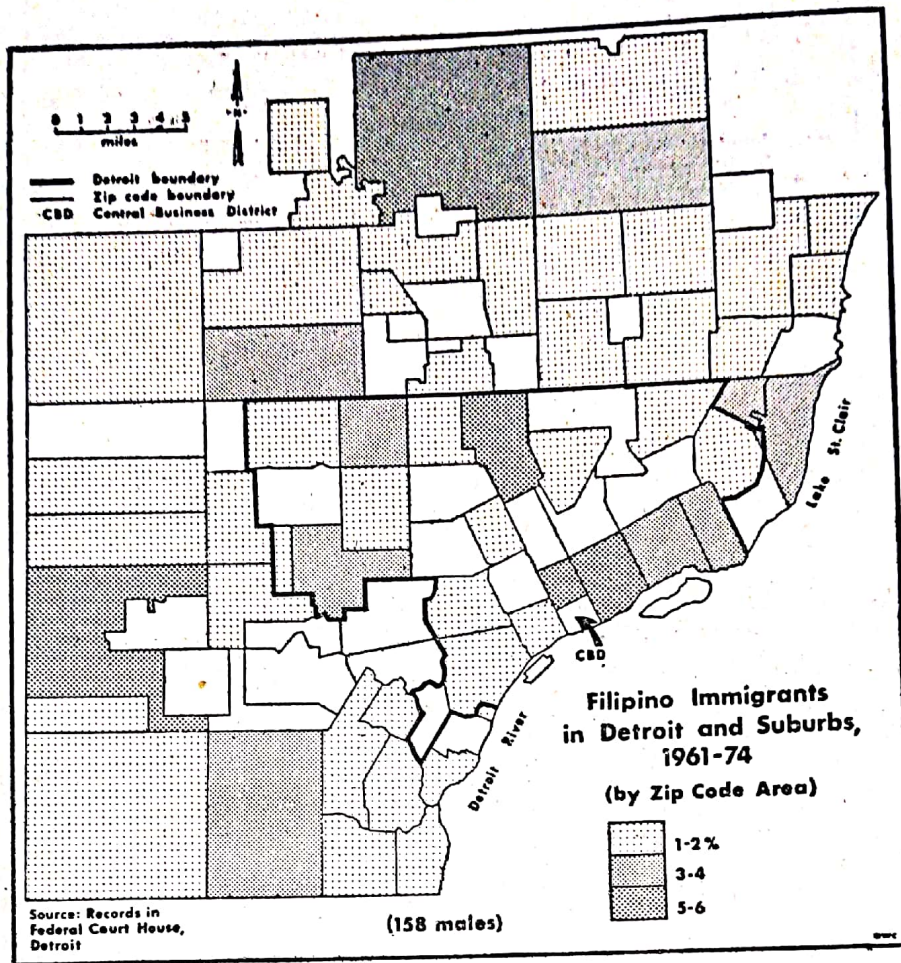


Figure 7. FILIPINO IMMIGRANTS IN DETROIT AND SUBURBS, 1961-1974 (BY ZIP CODE AREA).

tics. A considerable number of other Filipinos are employed in service related industries-business-jobs.⁸

The 132 Indian male immigrants were largely suburbanites (Figure 8). Many resided in the north and northwest suburbs of Detroit with the largest number located in Sterling Heights. A considerable number of the male Indian immi-

⁸ The following is a list of the sources of the male immigrants from the Philippine Islands. Not all of the immigrants provided their places of birth on the petitions. Some gave only the province that they were born in while others gave only the town. The number behind each source indicates the number of immigrants from that source. Jolo, Sulu (1), Tarlac (1), Baybay (1), Lubuagan (1), Vigan (1), Manila (31), Negros Oriental (3), Camarines Sur (1), Rizal (3), Sta. Ana (1), Pampanga (1), La Union (3), San Manuel (1), Cagayan (1), Guimba (2), San Pablo City (2), Luchan (1), Rosales (1), Juan Luna (1), Batangas (2), Malabon (1), Banga Aklan (1), San Antonio (1), Carigara (1), Bohol (1), Dueñas (1), Dumaguete (1), Bauang (1), Antique (1), Cavite City (2), Angeles (1), Malolos (1), Jaro (1), Hagonoy (1), Banga (1), Pasig (1), Cortes (1), Morong, Bataan (1), Bobon (1), Samal (1), San Fernando (1), Nueva Ecija (1), Iloilo City (2), Ilog (1), Subic (1), Isabela (1), Navotas (1), Cabanatuan (1), Guagua (1), Lianga (1), Pangasinan (3), Cebu City (6), Pagudpud (1), San Jose (1), Cotabato City (1), Quezon (3), Sta. Angel (1), Pasay City (2), Lingayen (1), Boac (1), Tapaz (1), Agoo (1), Tanauan (1), Midsayap (1), Alaminos (1), Lubao (1), Pasi-ma (1), San Juan (3), Tondo (2), Balungao (1), Baguio City (1), Mabini (1), Sexmoan (1), La Paz (1), Ormoc (1), Binmaley (1), Malolos (1), Uson (1), Laoag (6), Iba (1), Santa (1), Tiaong (1) and Basey (1). Author's note: Undoubtedly some of these placenames are misspelled on the petitions.

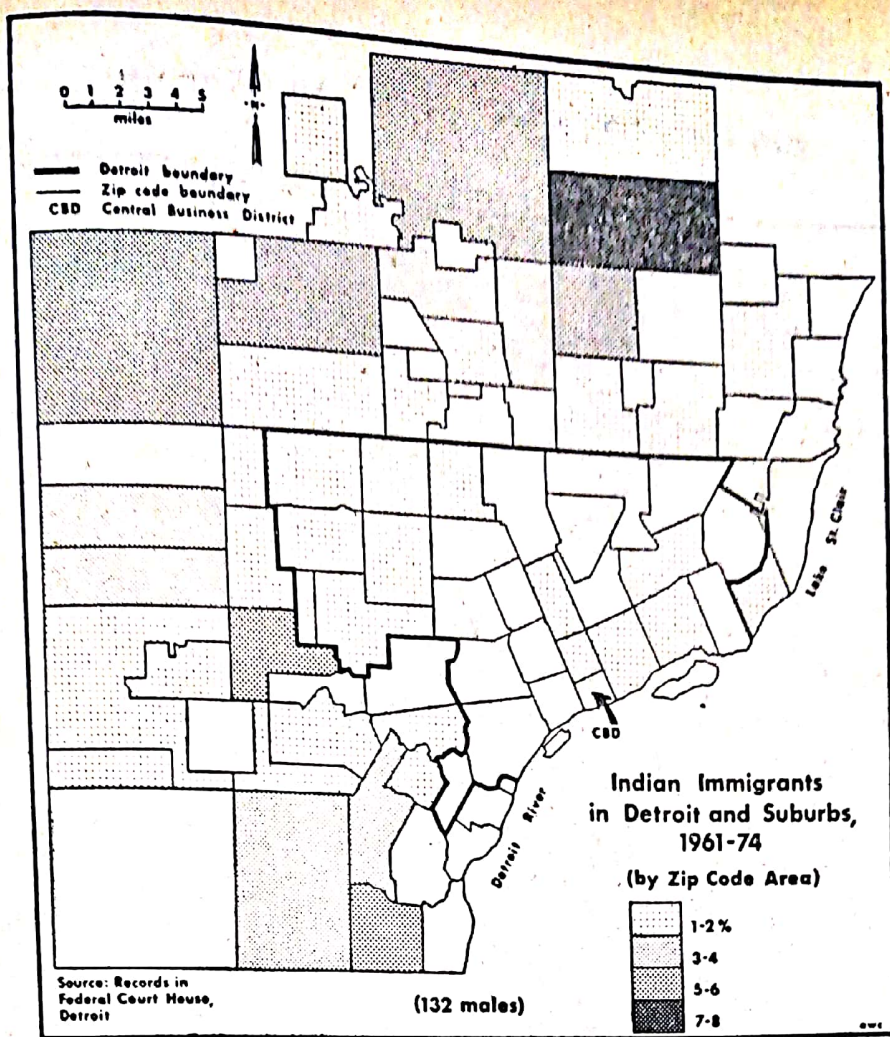


Figure 8. INDIAN IMMIGRANTS IN DETROIT AND SUBURBS, 1961-1974 (BY ZIP CODE AREA).

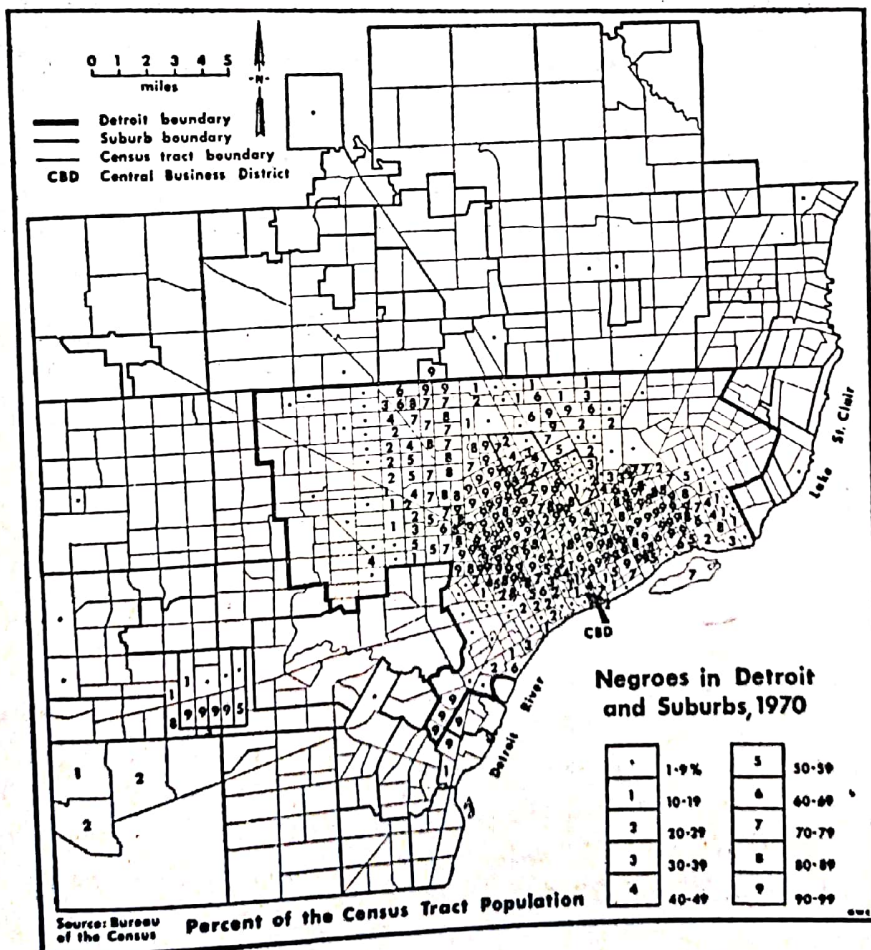


Figure 9. NEGROES IN DETROIT AND SUBURBS, 1970.

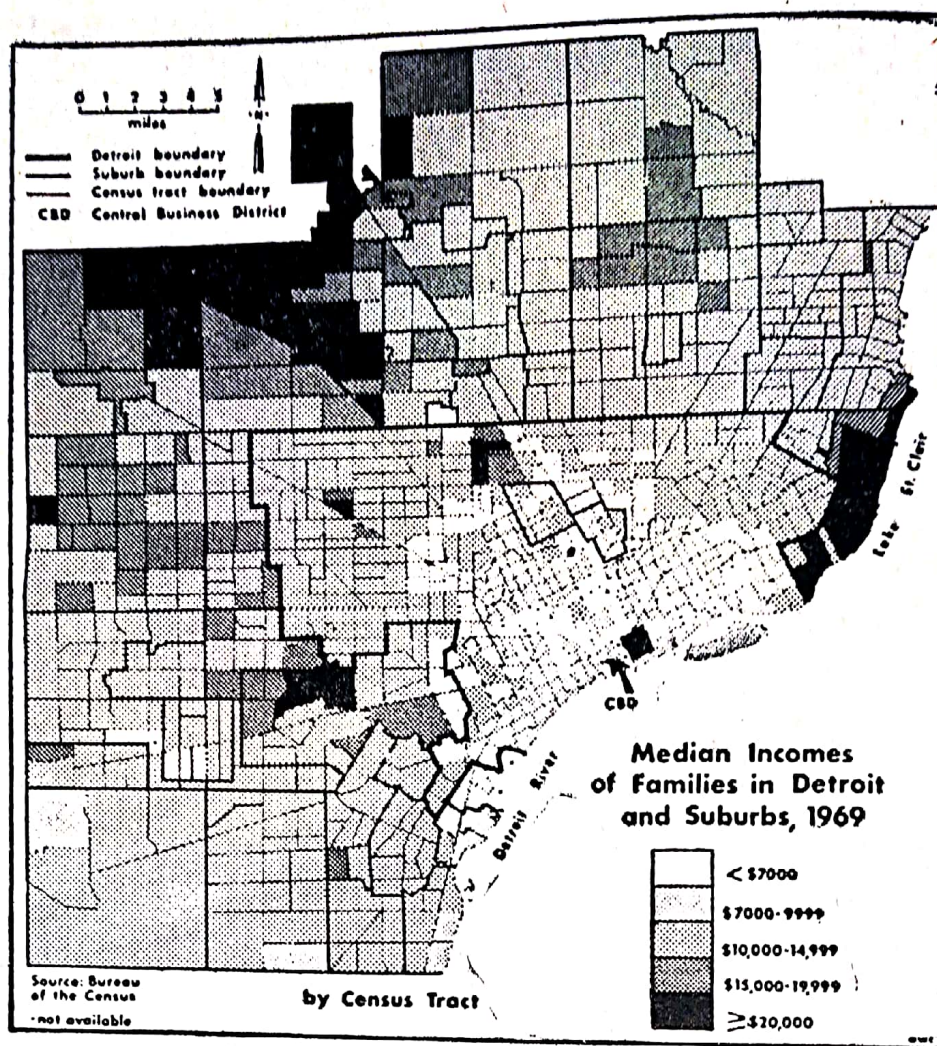


Figure 10. MEDIAN INCOMES OF FAMILIES IN DETROIT AND SUBURBS, 1969.

grants are professional people, especially civil and mechanical engineers, who work in the various suburban industries.

The Indian male immigrants by living mostly in the suburbs were rather distantly removed from the large Negro concentration within Detroit (Figure 9). None chose to reside in Inkster, a southwest suburb, which is also a Negro concentration.

The Filipino male immigrants who resided within Detroit lived in close proximity to or even in cases within heavy Negro concentrations, particularly that to the northeast of the CBD. The remainder lived in areas largely devoid of Negroes.

The Indians and Filipinos who settled in Detroit's suburbs lived where the median family incomes were over \$10,000 in 1969 (Figure 10). Most of these suburban families were in the \$10,000-\$14,000 income group. Those Filipinos who resided within Detroit and east of the CBD were largely in a lower income area, \$7000-\$9999. A small number of each group lived in suburbs where the median family income was \$20,000 or over.

CONCLUSIONS

A considerable number of immigrants from the Philippine Islands and India have settled within Detroit and its suburbs since 1960. Based upon data obtained from 290 Petitions For Naturalization, it was discovered that both immigrant groups settled mostly in the suburbs. Nearly ninety percent of the Indians elected to reside in the suburbs. A sizeable number, forty percent, of the Filipinos did, however, settle within Detroit, placing many of them in close proximity to or within Negro concentrations and lower income districts.

There was no strong concentration of either immigrant group within any one postal zip code area. Instead, there was a fairly wide distribution of both groups throughout Detroit and the suburbs, except for Detroit's densest Negro areas (northwest and northeast of the CBD), Inkster (which has a large Negro population), and in the areas with median family incomes of P20,000 or over. This settling pattern of both groups can be attributed to two things. One, neither group has language difficulties which make them tend to cluster together for reasons of communication. They are largely English-speaking peoples. Two, many are professionally or technically trained personnel, resulting in their ability to obtain employment throughout the Detroit metropolitan area.

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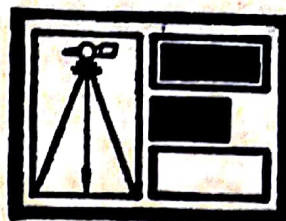
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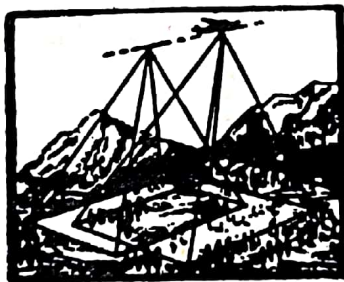
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