REPORT OF THE COMMITTEE ON TRACHOMA OF THE II.° PAN AMERICAN CONGRESS OF OPHTHALMOLOGY (*)

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MEMBERS

Dr. Ivo Corrêas Meyer — President
Dr. José A. Senà — (Argèntina, Uruguay, Bplivia, Chile and Paraguay);
Dr. Jorge Va'deavellano — (Perú, Ecuador, Colombia and Venezuela);
Dr. Phillips Thygeson — (Canadá and United States of America);
Dr. Polk Richards — (Central America);
Dr. Silvio de Almeida Toledo — (Brazil).

CONTRIBUTIONS

1) — The incidence and distribuition geographic of trachoma in the Americas (Dr. Corrêa Meyer).
2) — Trachoma in Canadá and United States of America (Dr. Phillips Thygeson).
3) — Trachoma in Mexico and Central America (Dr. Polk Richards).
4) — Notes on Trachoma in Brazil (Dr. Silvio de Almeida Toledo).
5) — Trachoma in Argentina, Uruguay, Bolivia, Chile and Paraguay (Dr. José A. Senà).
6) — Trachoma in Perú, Ecuador, Colombia and Venezuela (Dr. Jorge Valdeavellano).
7) — Etiology of trachoma — (Dr. Phillips Thygeson)
8) — Recent acquisitions in the therapy of the trachoma (Dr,

(*) Summary of the "Report" presented by the Committee on Trachoma, to II.° Pan American Congress of Ophthalmology, realized in Montevidéo (november 26th — december 8th. 1945).

THE INCIDENCE AND GEOGRAPHIC DISTRIBUTION OF TRACHOMA IN THE AMERICAS

The President of the II.º Pan American Congress of Ophthalmology delegated the task of studying and reporting on the problem of the incidence and distribution of trachoma in the Americas to the Committee on Trachoma. This was the chief task of the Committee on Trachoma, the others being subjects connected with it (treatment, etiology, prophylaxis, bibliography etc.) which could be undertaken by any one member of the Committee or by doctors who did not belong to the Committee, such work being considered as a contribution of an illustrative character or as medical research work necessary for the study of the many problems on the pathology of trachoma.

The Committee on Trachoma therefore, had to take the preliminary steps concerning the whereabouts of the foci of trachoma, to verify where the incidence was greatest, to evaluate in which country the problem was most acute and to observe the economic and hygienic conditions in the infected regions.

This subject was the chief preocupation of the Committee on Trachoma, as all other medical and hygienic problems dealing with trachoma would be connected or subordinated to the exact knowledge of the distribution and incidence of this disease in all the countries of the New World.

Dr. Harry S. Gradle, President of the II.º Pan American Congress of Ophthalmology, therefore thought it convenient to appoint a Committee on Trachoma, whose first task would be to collect information on the actual state of the incidence of trachoma in the Americas, so that the date collected could later serve as basic elements for the organization of adequate medical studies and for the installation of efficienty equipped sanitary posts for the fight against this endemic ocular disease.

The first Committee on Trachoma nominated by Dr. Harry S. Gradle was as follows: — Dr. Ivo Correa Meyer (President), Dr. José A. Senà, Dr. Jorge Valdeavellano, Dr. Phillips Thygeson and Dr. Polk Richards (Members). Dr. Polk Richards later resigned due to illness.

The President of the Committee had permission to include other members should the development of the work necessitate

such a step. The Committee on Trachoma would collect date and information on the incidence and distribution of trachoma in the Republics of the Americas and study the problems of trachoma connected with etiology, treatment, etc.

In order to obtain the greatest possible efficiency in the work undertaken, the subject, incidence and geographic distribution, was subdivided amongst the members of the Committee as follows: Dr. Phillips Thygeson: Canada and the United States of America; Dr. Polk Richards: Central America; Dr. J. A. Senà: Argentina, Uruguay, Bolivia, Chile and Paraguay; Dr. J. Valdeavellano: Perú, Ecuador, Colombia and Venezuela; Dr. Silvio de Almeida Toledo: Brazil.

Regarding the problems of etiology and treatment of trachoma, the Committee appointed Dr. P. Thygeson and Dr. J. A. Senà respectively to present these subjects, due to their being authorities on these questions.

With reference to the bibliograghic study, the Committee included the bibliography on trachoma of the Instituto Penido Burnier, of Campinas, which is compiled up to 1945 and was organized by Dr. Penido Burnier and Dr. Souza Queiroz.

The Committee on Trachoma thought it useless to compile the classical studies referring to prophilaxis for trachoma, as the methods of prevention were universally accepted and identical in every country. On the other hand, the Committee on Trachoma understood that, due to the recent acquisitions in the prophylaxis of trachoma, brought about by the use of the modern chemotherapeutic products, such as sulfanilamide and its derivatives, there was a new chapter still open to research rélating to the preventive effects of these new drugs, which is closely allied to Sanitary Medicine. It is an interesting aspect of the prophylaxis of trachoma which is now revealed for the investigation of those interested in this disease, and one which demands a careful study, in order to determine whether these new products really possess, besides their known therapeutic properties, an effective preventive power which, alone, would be able to expel trachoma from collective groups of human beings.

The Committee on Trachoma is of the opinion that an investigation of this new aspect of the prevention problem of trachoma is of immediate interest, once it is given the necessary time for

ample research and detailed studies so as to arrive at definite conclusions with regard to this matter.

Therefore, the Committee on trachoma proposes that a Special Committee of Prophylaxis be appointed, to study in lóco, that is, in the trachomatous foci, exclusively the prophylatic value of these new chemotherapeutic agents, and at the conclusion of their work present a report on the question and suggest what measures they believe adequate.

It was undoubtedly a great task which was entrusted to the Committee on Trachoma, that of studying the incidence and distribution of trachoma throughout the Americas, as the greater part of the work depend on the help and willingness of the ophthalmologists, who, in particular, greatly contributed to the realization of this study. In any other way very little would have been done, as in many of the countries it was not always possible to obtain official information. Thanks to the diligence and persistence of several colleagues whose names are included in the several partial reports, it was possible to carry out many studies relating to the question of the incidence of trachoma in the Americas. However, even including the helpful collaboration of ophthalmologists from every country in the Americas, the study on the result of the investigation regarding the incidence and geographic distribution of trachoma in the New World is incomplete. Much has still to be done on this matter. In relation to the problem of trachoma, there does not exist as yet in several countries a high level of sanitary consciousness. It is still a question of government planning, relegated to secondary plane although nearly always the disease, exceedingly endemic, rages amongst the most productive group of the population, such as the agriculturists, the farmers, the farm laborers, etc., thus decreasing the productivity of the community.

In the opinion of Dr. Moacyr Alvaro however, the present contribution of the Committee on Trachoma is a pioneer work, which reflects the spirit of cooperation of all the oculists of the Americas. It will be valuable too, because it presents a conjoint view of the serious problem of trachoma, and allows us to verify that in some countries the disease was only observed sporadically; in others, very few however, the disease was absent; and, in a large number of countries it was endemic in many provinces and states.

From north to south, from Canada to Argentina and Chile, trachoma is noted, and in many countries it has constituted important nuclei of endemicity, which demand special measures from the sanitary authorities.

An exact calculation of cases of trachoma existing through out the Americas cannot be given, but it would not be exaggerated to estimate the number at approximately[1] million. Among all the trachomatous nuclei, those of the United States, Brazil and Argentina are outstanding. Smaller nuclei are to be found in Chile, Mexico, Cuba and Paraguay. There are some countries, such as Uruguay, Bolivia and Perú in which the problem of trachoma is of little importance. In many other countries such as Guatemala and Costa Rica trachoma is unknown.

Amongst all these however, Brazil pays the largest tribute to the disease. Trachoma constitutes a serious medico-social problem throughout its vast territory and is chiefly observed amongst the population of the north-east of the country, the state of São Paulo and the colonial region of the state of Rio Grande do Sul.

Trachoma is not indigenous to the Americas. It was introduced by foreign immigrants, chiefly Italians, Arabs, Syrians. Turks and Spanish gypsies who arrived in large groups to the New Continent. Although there is no certainly regarding the contamination of the North American Indian, who, it seems, was infected by the first Europeans who landed in his country, it may be stated that in the other countries the aboriginal population was unaffected.

In two countries, the United States and Paraguay, contamination of large nuclei of the inhabitants came directly from the Menonite immigrants, originally from Russia. This people, in view of their religious convictions, for they considered disease to be a necessary punishment from God, would not submit to any treatment, thus aiding the spread of granulous conjuntictivitis.

We will now present the studies carried out by the members of the Committee on Trachoma and those relating to the countries which sent official answers to our questionnaire. Regarding some countries from which it was not possible to obtain elucidative date regarding the matter in hand, the Committee on Trachoma presents its own conclusions.

TRACHOMA IN CANADA AND THE UNITED STATES OF AMERICA

It is not certain as to whether the Indian population of Canada and the United States was affected with trachoma before the advent of the European colonists. However, many believe that trachoma was introduced by the first Spanish colonists. With regard to this statement, we must consider that the highest incidence of trachoma amongst the American Indians is found in those regions of the United States where the Indians came into contact with the first Spanish settlers.

In Canada, trachoma is chiefly observed in Monitoba, Saskatchewan, and British Columbia, amongst both the Indian and white population, and it has also been noted in Quebec, Ontario and Alberta. The cases of trachoma obs.erved in Manitoba and Saskatchewan are found chiefly amongst the Menonites, wich makes the problem of the eradication of the endemic diséasé difficult, owing to the religions beliefs of these settlers.

From 1924 to 1944, the Provincial Health Department was notified of 4,876 cases of trachoma throughout the whole of Canada, 869 of these being in Manitoba; 274 in Saskatchewan; and 1,097 in British Columbia.

According to Byers, the incidence of trachoma amongst the Indians should be considered as a sanitary problem of the first order. With reference to Byers, (1932), there were at this time 110,000 Indians in Canada, approximately a quarter of these living in British Columbia, another quarter of these living in the Prairie of Provinces of Alberta, Saskatchewan and Manitoba, a third quarter in Ontario and Quebec, and a fourth quarter in the Far North and the Maritime Provinces. The latter and the Far North, seem to be free of trachoma, and there are very few cases amongst the Indians of the tribes of Ontario and Quebec. On the other hand, the disease is much more frequent amongst the Indians of British Columbia and the Prairie Provinces, as in these regions the average of infection varies from 10 to 40 percent amongst the various tribes.

Sporadic cases of trachoma occur amongst the orientals of British Columbia.

It is not possible to calculate the number of cases of trachoma in the United States at present. Trachoma first started in the States of Virginia, Kentucky, Tennessee, Illinois and Missouri, which still constitute the chief endemic area for the white population. Gradle estimated that 70 percent of the cases were distributed amongst these States.

It is estimated however, that there are at least 25,000 cases of trachoma amongst the Indians and 33,000 cases amongst the other races spread throughout the country.

For an Indian population of 342.500, there would be a percentage of morbidity of 7.3, and according to Gradle, 60 percent of the cases of trachoma occur in the tribes of the south-west, 16 percent in the tribes of the middle west and along the valley of the Mississippi, whilst the rest irregularly occur in smaller and limited areas.

According to information received from Dr. W. G. Foster, a doctor in the Indian Service, new cases of trachoma are becoming less frequent, as in Arizona in 1944 only 13 active cases were noted out of 2,189 cases examined.

Regarding the white population, the incidence of trachoma is greatest in the afore mentioned States and in those of Arkansas and Oklahoma, but no State in the Union is entirely free from trachoma.

In California, sporadic cases have occurred amongst individuals of oriental origin (Asiatics). In Oklahoma, the disease is observed amongst the American descendants of the white colonists, who immigrated to the west in 1800.

In conclusion, Dr. Thygeson states that the incidence of trachoma in the United States cannot be calculated exactly due to incomplete references and uncertain diagnoses. More conclusive statistics are necessary, as, thanks to the betterment of economic and social conditions and the campaign against trachoma, these last 50 years have shown a reduction in the number of individuals infected with trachoma. We must also consider that the introduction of sulfonamide therapy has brought about a dramatic fall in the number of cases of active trachoma both in the Indian and white population.

TRACHOMA IN MEXICO AND CENTRAL AMERICA

In Mexico and the countries of Central America, the problem of trachoma is not of very great importance.

There are countries such as Santo Domingo, Guatemala, Costa Rica, Panamá (Canal Zona), in which trachoma is unknown.

In Haiti also, this sanitary and medical problem is of little importance.

In Cuba and Mexico although trachoma is not a serious problem small endemic foci have been noted. In one of these endemic foci, according to information received by the Committee on Trachoma from Dr. Rafael Silva, in the settlement of Nascimento de Mikappos, of 1,500 inhabitants, in the State of Coahuila, 80 percent of the population was trachomatous, that is 1,200. In this region a specialized Sanitary Service of medical assistance was using sulfanilamide.

Americas (British Guiana, Jamaica, Bahamas, Barbados, Bermuda, Trinidad and others) no case of trachoma had been noted by the Health Department.

NOTES ON TRACHOMA IN BRAZIL

Regarding the study on the incidence and geographic distribution of trachoma, the maiority of authors agree that the disease is localized chiefly in three large regions of the country, spread over seversal States, and which constitute the well known foci of the north-east, the State of São Paulo and the colonial region of the State of Rio Grande do Sul. The contributions of Moacyr E. Alvaro. Ciro de Rezende, J. Penido Burnier, Lech Junior and Herminio B. Conde show that these authors are all of the same opinion, and the truth of their statement is clearly demonstrated on the map by J. Penido Burnier and Lech Junior, where the three principal foci and the direction of. the spread of the disease are marked. The focus in the north-east started in the State of Ceará and extends not only to the nearest neighboring States of Maranhão. Piauí, Paraíba, Rio Grande do Norte. Pernambuco, Alagôas and Sergipe, but also to those further away.

such as Amazonas, Pará, Minas Gerais and Espirito Santo. In their book "Trachoma in Brazil", Aristides Rabello, Silvio de Almeida Toledo and Ataliba Amaral de Araujo, observe the spread of trachoma across this immense territory, and consider the formation of three large regions which include all these of Baía and Rio de Janeiro. These regions would be called Northern or Amazonic Brazil, North-eastern and Eastern Brazil.

The principal focus is that of São Paulo, which extends to the State of Minas Gerais and to the north of the State of Paraná.

The focus of Rio Grande do Sul is chiefly localized in the rich colonial region of the State. Latterly, it has been observed to be spreading towards the municipalities in the north and north-west of the State and towards the States of Santa Catarina and Paraná. If adequate measures are not taken the foci of São Paulo and Rio Grande do Sul will become one.

These four States constitute the focus of Southern Brazil and the States of Mato Grosso and Goiaz the Central Region according to the Classification of Rabello, Almeida Toledo and Amaral Araujo.

Herminio de Brito Conde, when answering the questionaire of the Committee on Trachoma, estimated that there are..... 150.000 cases of trachoma in the north-east of Brazil and 50.000 in the States of Rio Grande do Sul, Santa Catarina and Paraná. Silvio de Almeida Toledo, Director of the Department of Trachoma for the State of São Paulo, calculates the cases of trachoma existent in the State of São Paulo at 500.000.

Up to 1943, when the "Campaign against trachoma" was started by the Federal Government throughout the country, the fight against this disease was in charge of the State Governments. Herminio Conde, an ophthalmologist from the National Department of Health, began the campaign with a study of the conditions in the North of Paraná, continuing in 1944, in the north-east, where the Antitrachomatous Post of Cracto was installed. It is only fair to mention the model organization of the Department of Trachoma for the State of São Paulo, now in charge of Dr. Silvio de Almeida Toledo, having Aristides Rabello and Caiado de Castro worked in the organization of this department.

"ORGANIZATION OF THE SERVICE OF STRUGGLE AGAINST TRACHOMA IN THE STATE OF SÃO PAULO (BRAZIL)"

Dr. Silvio de Almeida Toledo, who is Director of the Trachoma Service of the Health Department of the State of São Paulo (Brazil), describes in the paper "Organization of the Service of Struggle Against Trachoma in the State of São Paulo", the organizaton he gave to the services of trachoma prophylaxy in all the territory of the state in the years 1943, 1944 and 1945, (january to jugin), undertaking the statistical analysis of 435.818 persons enrolled in the Dispensaries Trachoma Units, homer and community centers.

The plan of struggle against trachoma by Dr. Silvio de Almeida Toledo, was by himself organized taking as basis the epidemiologic studies and the field works, realized by the author in the state of São Paulo, where the trachoma exists since the two last decennia of the last century, brought by imigrants.

The author begins in Chapter I making considerations of general nature about the problem of trachoma in the state, stating the fundamental directrixes which he practised and the adopted complementary measures.

In the following he states that the campaign is being carried out in the three steps: a) preparatory phase; b) phase of installation and execution; c) phase of consolidation.

In Chapter II, the author presents the geographic chart of trachoma in the state, organized according to a schematic and comparative division in 7 zones, as a basis for the installation of the Dispensaries and Trachoma units in the state.

In Chapter III, the author describes the general organization of the service of prophilaxy, which comprises a directive organ which is the Directorate; executive departments of prophylaxy and medical-sanitary assistance, which are the 37 Dispensaries of Trachoma and 50 fixed Rural Units and mobile sub-units: 1 Department of Research which is th Institute of Trachoma and the administrative part of the Trachoma Service.

Studying in detail the Trachoma Dispensaries, the rural units and sub-units, the author mentions the criteria for localization, installation, the standard plants for the buildings, the personnel, the various kinds of equipment, etc.

In this chapter, the author studies detailedly the funcioning of the 87 Dispensaries and units. He states that the Dispensaries are usually annexed to the Health Centers in the states and towns; some of them work isolatedly, there being no Health Center in the town. They are situated in the zones where the endemic disease is more prevalent, these zones being determined after a careful statistic study.

The fixed Rural Units are situated in villages, plantations, factories. The mobile sub-units are an ambulance-carriage, provided with a medicine chest and folding chairs; the nurse travels through the rural zones, staying provisionally, on the doctor's advice, at plantations, farm, or whereever it is necessary.

In the Dispensaries throughout the state, there are working 35 ophthalmologists and 110 male and female nurses specialized in trachoma.

55 doctors and 177 male nurses have been station in the Dispensaries and Trachoma Units, for learning prophylaxy's principles.

In this chapter, the author discusses medical and surgical treatment, and the internment of patients in the Regional Hospitals.

The author explains the criteria for these election of tecnical therapeutic doses, method, prevention of accidents, dietetics, counter-indications intolerance to the drug, toxicity of sulf drugs.

He then studies administration and states that each patient enrolled and examined cost the state Crs. $19,81 and each cured cost Crs. $123,377.

(The dollar costs Crs. $20,00 (twenty cruzeiros), brazilian money).

The author mention other adopted complementary measures aiming to promove: —

1) — Compulsory notification;

2) — Obligatory treatment;

3) — Adoption "larga manu" of sulphonamides and of the mixtures of this drug which produced the best results;

4) — Destruction of the familiar seat of trachoma and treatment of the patient in his home, by intermedium of th itinerary service ambulance-carriage or mobile sub-units;
5) — Choice and preparation of technical personnel (doctors and nurses);
6) — Studies about epidemiology and medical and surgical treatment of trachoma;
7) — Scientifical researches;
8) — Sanitary education, by means of conferences, talks, distribution of pamphlets, etc.);
9) — Campaign for sanitation of the habitations;
10) — Rising "standard of living";
11) — Struggle against intercurrent diseases: verminoses, malary, sifilis, tuberculosis, affections of nose, throat and teeth, "focal sepsis";
12) — Trachoma and the question of imigration;
13) — Cooperation of the primary school in the prophilaxy of trachoma;
14) — Departments that cooperate with the campaign (Faculties of medicine, Scientifical Societies, etc.).

In the following chapter, the author mentions statistical date for the years 1943, 1944 and 1945. (january to juin):

BRIEFLY:

Persons enrolled and examined in the Dispensaries, Trachoma Units, homes and community centers	357.171
Trachomatous treated	69.183
Eye patients treated (othehr ocular diseasses	32.106
Units of sulpha administered	1.716.238
Ocular operations	5.064
Laboratory tests	14.839
Injections	15.762
Visits to homes and community centers	11.591
Educational lectures given .....â..	60.041
Educational talks realized	22.146

The author gathered a very plentiful material of much value in study of 69.183 trachomatous enrolled in the service of which he is Director.

The author studies in detail: a) medical and sanitary assistance, with regard to attendance, recoveries, operations, laboratory tests; b) epidemiology with regard to types of trachoma, nationality of patients, color, sex, profession, etc.; c) trachoma and blindness; d) trachoma and biological tests; e) trachoma and climatological and geographic conditions; f) trachoma and contagion, ending by a study of figures regarding prevalence and infection.

TRACHOMA IN ARGENTINA, URUGUAY, BOLIVIA, CHILE AND PARAGUAY

The Argentina Republic

Trachoma is endemic amongst the inhabitants of Northern Argentina. On the whole, there is not a great deal of trachoma in the country, its Capital, Buenos Aires, being considered as free from this disease.

Trachoma is not indigenous to the Argentina, but was introduced by Italian, Spanish, Jewish, Arabian, Turkish, Southern European and Brazilian immigrants.

Due to favorable climatic, social, sanitary and economic conditions, trachoma has spread in the subtropical provinces of Santiago del Estero, Tucumán, Salta, Jujuy, Chaco and the north of Santa Fé and also in those of the coast, Corrientes and Entre Riós.

In the provinces of San Luis, Mendoza and San Juan and in the settlements of Formosa and Missões a few cases of trachoma have been observed, but not in sufficient numbers to constitute a sanitary problem.

Argentina is slowly becoming equipped for the fight against this endemic disease, and is already well advanced in a successful campaign which is being carried out amongst the school children.

BOLIVIA

Trachoma is very frequent. Out of 14,216 patients examined by Dr. Aniceto Solares, including those with refractive errors, only 123 cases of trachoma were observed, this average, 0.86 percent, being considered very low.

In this group 103 are Bolivians, 16 Syrians; the rest being Egyptians, Italians and Chileans, 68 cases were observed in Sucre 11 in OFruro; 16 in Cochabamba; 2 in Potosi; 1 in Tarija; 1 in Santa Cruz and 8 in Uncia.

Bolivian cities, only observed cases of trachoma in foreigners who had contracted the disease in their own countries. Porcel found no cases amongst the natives or amongst the white population.

The same observation was made by Prof. Luiz Landa Lyon, who, in 20 years of professional practice, only observed 3 cases of trachoma in persons from abroad. He also states in an article published in "Prensa Médica", a copy of which was sent to the Committee on Trachoma, that trachoma does not exist in La Paz, as not one case of this disease was noted in 20,000 patients examined in his Ophthalmic Clinic.

Therefore, the Republic of Bolivia has no trachoma problem.

CHILE

The incidence of trachoma is slight throughout the country, with the exception of the southern region, between the parallels 38.39 and 44, in which due to favorable economic and climatic conditions, the number of cases of trachoma s already significant, specially in the province of Chiloé, where 80 percent of the population are directly descended from the Indians and whose standard of living is very low. Sanitary conditions are exceedingly bad and are increassed by poverty and lack of medical attendance. In this southern region, which includes the provinces of Cautin, Valdivia, Osorno, Llanquihué and Chiloé, with a population of 892.583 inhabitants, 2,471 cases of trachoma were observed between 1935 and 1942 according to Dr. René Contardo.

In the other regions in Chile, trachoma does not constitute a sanitary problem, for in this same period of time (1935-42) Dr. Contardo only registered the following date: North Zone (Provinces of Tarapacá, Antofagasta, Atacama, Coquimbo) with 579.165 inhabitants — 31 cases of trachoma; North Central Zone (Provinces of Aconcagua, Valparaiso, Santiago, O'Higgins Colchaugua, Curicó, Talca), with 2,381.490 inhabitants — 181 cases of trachoma; South Central Zone (Provinces of Maule, Linares, Nuble, Concepción, Arauco, Bió-Bio, Malleco) with 1.104.484 inhabitants — 46 cases of trachoma; and the Southern Zone (Provinces of Aysen and Magallanes) with 65.827 inhabitants — not one case of trachoma was noted.

All the authorities believe that trachoma was introduced by foreign immigrants, especially Turks, Syrians and Egyptians and, in a lesser degree, Spaniards and Italians.

PARAGUAY

Up to 1910, Paraguay, due to its isolated state as a Mediterranean country, was free from trachoma. However, with the entry of Manonite colonists, granulous conjuntivitis was introduced on a large scale, and later (1923) when Japanese, Polish, German and Italian immigrants entered the country, the number of cases became alarming. As yet there are no complete statistics regarding the incidence of the disease. According to Dr. Gustavo Vasquez, the Section on Statistics of the Ministry of Public Health published the following figures on the morbidity of trachoma, although these are incomplete, as they only include 25 cities and settlements situated in the central zone and suburbs of the Capital.

Year	Capital	Country	Total
1938	433	3	436
1939	82	18	100
1940	202	23	225
1941	90	—	90

The greatest number of cases were noted in the northern zone of the country and in the Chaco, where colonies of Menonites are localized.

Dr. Codas Thompson considers two large zones of distribution of trachoma; the Western Region or Chaco Boreal and the Eastern Region. In the latter, which is an immense desert, the Menonites are to be found those people being responsible for the transmission of trachoma to the native Indian population.

URUGUAY

According to Prof. Alberto Vázquez Barriere, trachoma was unknown in Uruguay up to 60 or 70 years ago, and was introduced by immigrants from Spain, Italy, Arabia, the Balkans, etc.

The total number of cases is estimated at 1,500, of which many can be considered as cured or improved.

Montevideo and Canelones constitute the principal focus, as amongst the 1,00 cases examined, 454 were from Montevideo and 167 from Canelones.

Besides this chief focus, 3 other regions should be considered although the incidence is slight: that including San José, Co'onia, Minas, Maldonado, Florida and Durazno which shows an average between 35 and 58; that of the west, which is less attacked by the disease and which includes Artigas, Salto, Paysandú, Rio Negor, Soriano, and Flores, the percentage being very low, 0 to 9 per thousand; and that of the east, on the border of Brazil, which includes Rivera, Cerro Largo, Tacuarembó, Treinta y Tres, and Rocha, averages varying from 10 to 18 per thousand.

TRACHOMA IN PERÚ, ECUADOR, COLOMBIA AND VENEZUELA

PERÚ

Although it does not constitute a serious sanitary problem trachoma undoubtedly exists in Perú.

Documents have been found which show that the primitive inhabitants of Perú had knowledge of some external ocular diseases, but nothing is really known regarding the existence of trachoma.

It is to be supposed that granulous conjunctivitis was introduced by the first immigrants of Asiatic origin, who colonized

Perú and who were affected with the disease, but nothing positive is known regarding this subject, although there are racial characteristics between them and the present aborigines of the country.

Trachoma was observed later amongst oriental, Chinese and Japanese immigrants, who came to the country in small numbers.

In answer to the inquiry made by Dr. J. Valdeavellano, who sent out 180 copies of the questionnaire drawn up by the Committee on Trachoma to the doctors working in sanitary services, there were 72 replies of which only 5, referring to 6 provinces, were affirmative. These reported 24 casés of trachoma.

Of the 41 cases observed by Dr. J, Valdeavellano, between 1939 and 1944, 17 were from Lima, 5 from Ayacucho, 3 from Ancash, 3 from Junin, 2 from Huanaco, 2 from Huancavélica, 2 from Ica, 2 from Loreto, 1 from Cajamarca and 1 from Amazonas.

The cases of trachoma are divides amongst the 16 Departments, disseminated throughout 28 provinces, covering 62 percent of Peruvian territory.

ECUADOR, COLOMBIA AND VENEZUELA.

In spite of every measure taken by Dr. J. Valdeavellano, there was no reply to the questionnaire from the Committee on Trachoma from Ecuador, Colombia and Venezuela.

Through the inquiry undertaken by several doctors, it was found that the sanitary conditions referring to trachoma in these countries seem to be identical, and no different to those observed in Perú.

In Columba, according to Prof. Francisco Vernaza, ophthalmologists find that trachoma is very infrequent, even rare. Out of 22.228 patients examined only 8 cases of trachoma were noted, 3 of those being foreigners.

In Venezuela according to Peret Gentil (1941) trachoma is endemic along the Venezuelan Coast, especially on the island of Margarita, the regions of Barlovento, Laguna, Valencia, Guaira, Maracaibo, and Goaviria Vene olana, but disseminated cases have also been found in the interior of the country, in places in which the population comes more into contact with immi-

grants from the Levant or the Far East. Peret Gentil found no cases of trachoma in the Andes State, and states that in 1940, only all cases were reported by doctors throughout the country. The author reported 14 cases.

According to J. Rhode, trachoma was chiefly introduced by Chinese and Syrians. Cases were observed in the States of Aragua and Carabobo in addition to those noted in the aforementioned ports and in the ports of Carúpano and Puerto Cabello.

Notification of cases of trachoma is mandatory and there are adequate laws for the prophylaxis of the disease. According to Rhode, cases of trachoma in Venezuela are rare.

ETIOLOGY OF TRACHOMA

The literature on the subject of the etiology of trachoma is voluminous and confusing and only a small part of it can be considered pertinent today. Among the many factors leading to this confusion may be mentioned the complexities of the disease, its diagnostic problems, its failure to inject ordinary laboratory animals and the lack of specifity of the experimental disease in monkeys and apes. Furthermore, trachoma is perhaps the only one of the infectious diseases upon which the majority of published etiological studies have been made by clinical workers rather than by bacteriologists or pathologists. In this review only those contributions will be considered which, in the writer's opinion, are historical interest or of current significance.

1. Trachoma is caused by a virus of large particle size belonging to the psittacosis-lymphogranuloma group of viruses. All members of this group have the characteristic properties of viruses; namely (1) filterability under conditions in which ordinary bacteria are retained, (2) intracelular habitat, and (3) inhability to grow on artificial media. They are differentiated from the typical large viruses, however, by their complex cycle of intracelular development, their tinctorial properties which resemble those of the Rickettsiae, their complex antigenic constitution, and the sulfonamid sensitivity of many of their constitution, and the sulfonamid sensitivity of many of their members. They appear to form a group intermediate between the typical large viruses and the Rickettsiae.

2. The virus has not yet been cultivated with certainly either in the yolk sac or chorioallantoic membrane of the developing chick embryo or in tissue culture.

3. The virus appears to be strictly epitheliotropic. No proof of its occurence in human cells other than the conjunctival and corneal epithelium has yet been offered.

4. Researches of the past 35 years have only served to prove the essencial correctness of the initial studies of Halberstaédtér and Prowazeth in 1907 and of Nicolle, Cuenod and Blaizot in 1912 who demonstrated the inclusion bodies and the filterability of the virus respectively.

5. Many of the essencial properties of the virus remain to be determined. This is due no doubt to the extraordinary handicap of having no truly susceptible experimental animal and to the difficulty of obtaining material containing adequate concentrations of virus.

RECENT ACQUISITIONS IN THE THERAPY OF THE TRACHOMA

To what conclusions can we actually come about the use of the sulfamides in the treatment of trachoma?

Do the sulfamides cure trachoma? Dealing with an affection of cronical evolution with changeable clinical aspects alternating latent periods and other of activity, we know how difficult it is to consider a trachomatous as cured.

The truth is that therapeutic, as well as the diagnostic resent the doubt we still have in regard to the etiology of the disease. We speak about a clinical diagnostic as we speak about a clinical cure. Therefore we believe that is too early to speak about a cure of trachoma by the sulfamides, it may be necessary some years more of experience and observation.

But if the sulfamides do not constitute such a desirable specific medicament of trachoma, its beneficial action is indisputable in complicated cases of the disease. Till now all the treatments, destinated to struggle the trachoma were desagreable to the patient being slow and painful. Even if we suppose that

the improvement should be transitory and apresent themselves as relapsed and isolated, there is still valour in the new medicament.

Abreviation of the necessary time for the cure means a decrease of expenses for the treatment in the most cases in charge of the Government, a reduction of the incapacity for work, reason why the use of sulfamide cases incalculable importance not only for the wellbeing of the patient but also for the social economy.