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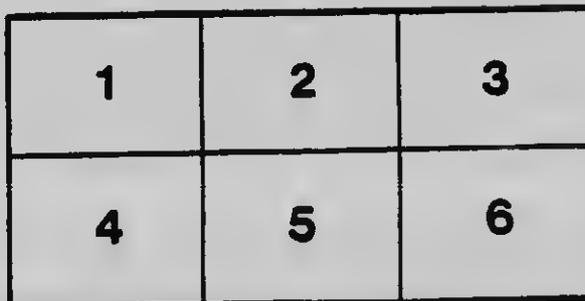
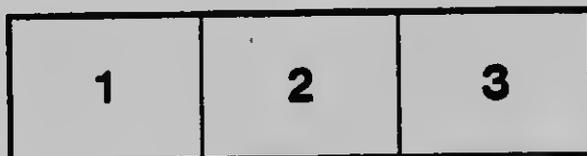
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**TENTH**  
**INTERNATIONAL GEOLOGICAL CONGRESS**  
**MEXICO, 1906**

By **WILLET G. MILLER**

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# TENTH INTERNATIONAL GEOLOGICAL CONGRESS MEXICO, 1906.\*

By WILLET G. MILLER.

The Tenth International Geological Congress is not wholly unknown even to people in this country who take little or no interest in geology or mining.

The audience may recall the attention which the Canadian newspapers gave to certain features of the Mexican Congress. One morning, for instance, it was announced with startling headlines that a distinguished congressman from Montreal had been overwhelmed by a volcanic outburst on Mount Colima. Another day telegraphic despatches told in no less terror-inspiring language of a snowslide on Mount Orizaba that carried with it a Toronto congressman three thousand feet to the depths below. Happily these despatches, copies of which with brief, but appreciative obituary notices I found in my scrapbook the other day, proved to be but fabrications of press agents, and all the members of the Canadian contingent returned to their native land, a little the worse for wear, perhaps, but still in a satisfactory state of convalescence.

In describing the Mexican Congress it will be well to note briefly various features of the work of organization, the excursions, the sessions, entertainments and finally the achievements or beneficial and lasting results of the congress. A knowledge of these features should be of value in making arrangements for the Canadian Congress, and in carrying out the work. Incidentally I shall refer to the natural attractions that Mexico offers to visitors, and the special facilities that the country had in 1906 for entertaining a large body of people. If it is decided that our country, compared with Mexico, is lacking in natural attractions or in facilities for entertaining, then we should attempt to make up for these in other ways. Personally I believe that Canada, while offering a great contrast to Mexico, will prove no less attractive to our visitors, and that the achievements of the Twelfth Congress will be of much importance to science and to this country.

The following passage from Prescott, describing the march of Cortez' conquering army nearly 400 years ago, from the sea to the valley of Mexico, shows the character of the scenery:

"Nothing could be more grand than the view which met the eye from the area on the truncated summit of the pyramid. Toward the north stretched that bold barrier of porphyritic rock which nature has reared round the Valley of Mexico

with the huge Popocatepetl and Iztaccihuatl standing like two colossal sentinels to guard the entrance to the enchanted region. Far away to the south was seen the conical head of Orizaba soaring high into the clouds, and nearer the barren, though beautiful shaped Sierra de Malinche, throwing its broad shadows over the plains of Tlascala. Three of these are volcanoes, higher than the highest mountain peak in Europe, and shrouded in snows that never melt under the fierce sun of the tropics. At the foot of the spectator lay the sacred city of Cholula, with its bright towers and pinnacles sparkling in the sun, reposing amidst gardens and verdant groves, which then thickly studded the cultivated environs of the capital. Such was the magnificent prospect which met the gaze of the conquerors, and may still, with slight change, meet that of the modern traveller as from the platform of the great pyramid his eye wanders over the fairest portion of the beautiful plateau of Puebla."

For some years many geologists had expressed the hope that a meeting of the Congress would be held in Mexico at a time convenient for the government of the country and the Mexican geologists. The publications of the Geological Institute of Mexico had shown that the country offered a vast field for geological studies of all kinds. Moreover, being such a beautiful land and so interesting from other points of view, its natural features having been so well described by Humbolt and its early history in the fascinating pages of Prescott, and possessing great mineral wealth and historic mines, Mexico offers unexcelled attractions to visitors, especially to those from more northern regions.

At the Ninth Congress, held in Vienna in 1903, the hope of having a meeting in Mexico was realized, it being decided to hold the tenth meeting in that delightful country. Canada had also sent a invitation to Vienna, but the attractions of Mexico and the hearty invitation extended by the Government and the Geological Institute won the day for the southern country.

The invitation having been definitely accepted, a Committee of Organization was formed. This committee solicited the co-operation of all geologists residing in Mexico, and of a certain number of mining and other industrial companies and finally that of the governors and high officials of various states of the

\*An abstract of this paper was read at the meeting of the Organization Committee of the 12th Congress in Ottawa in March. About six-sevenths of the time devoted to the 12th Congress will be occupied with excursions, which will be of as much interest and value to mining engineers as to geologists, hence the Congress might properly be called a "Mining and Geological Congress."

Republic whose assistance would be valuable in the conduct of the excursions.

The Executive Committee was composed for the most part of members of the National Geological Institute (or Geological Survey), the president being the director of the Institute. The committee was charged with all the preparations for the Congress, both of a scientific and of a purely administrative character.

The organization committee had over ninety members among whom were the foreign directors of several companies, e.g., Sir Westman D. Pearson and Mr. John Hayes Hammond. The executive committee consisted of twelve members.

Local committees were organized in various states of the Republic to assist with the work of the Congress and to arrange for receptions and other entertainments. In most cases, during the excursions the Governors of the states acted as chief hosts.

#### Financial Assistance.

In addition to other assistance, the Mexican Government made a grant of \$164,000, or \$82,000 in gold, for the expenses of organization, the arranging of excursions, the publishing of the guide book and for other purposes.

All the railways in Mexico gave important reductions, at least fifty per cent., in the price of transportation. Half fare rates from all points east of Buffalo, Pittsburg and Atlanta to Mexico and return were given by the United States railways. The railways controlled by the Pearsons and by the Copper Queen and other companies, not only gave free transportation but they made the excursionists their guests in all respects.

The Copper Queen Company, and other companies, whose hospitality the writer had the good fortune to receive, sent a splendidly equipped train to El Paso to meet the excursionists at the border. For six days the excursionists were the guests of these companies, visiting the smelters at Douglas and the mines of Bibe, Cananea and Nacozari.

#### Steamboat Fares.

European members were encouraged to visit Mexico by the government paying for a reduction of one-half of the steamboat fares on specified lines, viz., Hamburg-American and Ward, either to Vera Cruz or to New York.

The "Compania Transatlantica Espanola" gave a reduction of thirty-three per cent., and the Mexican Government made the reduction up to fifty per cent. by paying the difference.

The Mexican Government also assisted transportation during the excursions by furnishing saddle horses from detachments of the rural police. Horses were always available when needed. (I am sure it would be

most interesting to this audience were one of the Canadian excursionists to relate his experience in riding one of these metalled rural chargers from the railway station at San Juan to the Pyramids of the Sun and Moon, through roadways lined with stone walls and giant cacti, across the parched Aztec plain even to the slopes of the pyramids themselves. Compared with his ride, that of John Gilpin was merely a canter in a village street, and Mazeppa's steed, so well described by Byron, was not more wild and free. In his account of the excursion, however, President Aguilera speaks of it as forming a "joyous caravan," some on foot, others in carriages, but the greater number "à cheval.")

#### Excursions.

Preceding and following the sessions which were held in the City of Mexico from Sept. 6th to the 14th, several excursions were given under the patronage of the government. The earlier excursions consisted of one to the south lasting nine days, one to the east, three days, one to Juchitlan, thirteen days, and one to San Andres and Colima, twelve days.

After the sessions there was an excursion limited to 250 persons to the north, through the great mining regions, that lasted twenty days. The excursionists occupied two trains, each person being given a section to himself. Connected with this excursion was the complimentary one to mining and smelting centres given by the Copper Queen and other companies in Arizona and Sonora.

After the excursion to the north there was another, essentially for paleontologists, beginning October 6th and lasting eight days, to the southern part of the Republic.

During the sessions four extremely interesting excursions lasting not longer than a day each were given. They were held on alternate days so as not to interfere with the sessions.

One of them was to Coyocan to see the great lava flows, which, while recent in a geological sense, are prehistoric. Human remains, fragments of pottery, cobs of Indian corn and other materials show that the flow took place after the area was occupied by man.

The second excursion, to the historic City of Cuernavaca, was organized by the Geological Society of Mexico, and the excursionists were welcomed by the Governor of the State of Morelos and a reception committee. The park, the botanic garden, and especially the palace of Cortez, which still stands little impaired by time, are all of historic interest. At the banquet, given on this as on all other excursions, one of our Mexican hosts cheered us with the words: "Ladies and gentlemen, I drink to the glory of your countries; friends of Mexico I drink to your health."

The Minister of Public Instruction "desiring to show his profound regard for the congressionists" or-

ganized the third excursion, to visit the Pyramids of the Sun and Moon. The excursion was under the direction of the Inspector of Archeological Monuments. The pyramids proved to be most interesting, resembling those of Egypt, and the banquet of the afternoon in the grotto or huge cave was in all respects unique. It is much larger than the historic one described by Virgil, in which Dido and Aeneas sought refuge from the elements. In fact the Porfirio Diaz cave is large enough to have accommodated the entire retinue of these famed personages, so that one pair need not have been left in lonely isolation.

In his memoirs, my friend Aguilera has not tarried long in describing this cave banquet, but we recall that the Director of Public Works received us with the words, "Mexican welcomes all who have good will in their hearts and science in their brains."

The fourth of these excursions was made to the famous silver mines of Pachuca where a welcome was extended and a banquet provided by the Governor and other high officials of the State of Hidalgo and of the City of Pachuca.

#### Sessions.

The opening session was held at 11 o'clock on the morning of September 6th, in the great reception hall of the National School of Engineers, under the presidency of his Excellency, the President of the Republic, General of Division Don Porfirio Diaz, high protector of the Congress. There were also present the Diplomatic Corps and the Ministers of State.

I shall not say much concerning the sessions, except that like the excursions, receptions and entertainments they were a credit to the Mexican geologists, who had devoted much care and attention to securing papers on important subjects and arranging for discussions on leading themes. Most of us do not attend geological congresses in order merely to listen to the reading of papers and to discussions. While at such a gathering these are valuable and necessary, persons visiting a country as attractive as Mexico desire to learn something of its geology at first hand, and to become acquainted with fellow students of geology from other parts of the world.

Four major subjects were selected by the executive committee for discussion, and the promises of several men in lead in each subject were secured some months before the sessions began. The subjects were: Conditions of Climate in Geological Epochs, Relations Between Tectonics and Igneous Masses, Genesis of Metaliferous Deposits, and Classification and Nomenclature of Rocks. Papers were read and discussions took place on various other subjects during the session.

#### Receptions and Entertainments.

While these have been referred to incidentally in preceding notes it will be well to mention them more systematically in order to show what may be expected

of us in Canada during the coming summer. In many ways Mexico possesses, or did possess in 1906, facilities for entertaining a larger body of people than can be equalled in but few countries. We in Canada cannot hope, I fear, to make the social side of the Twelfth Congress an enjoyable and attractive as was that of the Tenth. However, Canada's newness, a country in the making, will appeal to many.

On the evening of the 5th of September, preceding the opening session, there was a reunion of the congressionists at the restaurant in the historic wood of Chapultepec. As Aguilera says, "the time was spent in a manner very animated," and there was a dinner with music by the artillery band.

On the evening of the following day, the members of the Geological Institute held a reception. The interior of the hall was decorated with the flags of all the nations represented at the Congress. There was band music and a "champagne supper." Three hundred persons were in attendance.

The morning of the 7th was spent in visiting public institutions of the city, carriages being furnished. Visits were made to the National Museum, the National Medical Institute, National Library, the Cathedral, and the Academy of Fine Arts. Small parties visited the National Astronomical Observatory.

In the evening of this day, the Government Council of the Federal District, and the Municipal Council tendered a banquet at the Municipal Palace. Flags of various nations were again in evidence here. Those in attendance at this banquet included representatives of the Diplomatic Corps and members of the Mexican Government. At the head table presided the Vice-President of the Republic. The souvenir of the banquet took the form of a beautifully illustrated volume descriptive of the city.

A concert, with "champagne lunch" was given on the evening of Sept. 8th. On the evening of the 10th a reception was held by one of the members of the government.

President and Madame Diaz on the evening of the 12th, offered a "ten" at the beautiful chateau de Chapultepec. The cards of invitation announced a "five o'clock tea," but in reality the presidential residence had been prepared for a snore concert. Arriving at the chateau at five o'clock the congressionists were received by President and Madame Diaz. At this reception were the members of the Diplomatic Corps and high officials of the government.

From the high balcony of the chateau a magnificent view could be had of the distant volcanoes, Popocatepetl and Ixtaccihuatl.

At six o'clock commenced a concert in which principal Mexican artists took part. At seven dinner was served, and at 11.30 the guests departed having been delightfully entertained for over six hours.

On the evening of the 14th a "banquet fraternal" was held.

The entertainments provided at various places during the excursion were numerous and showed the interest that the Mexican people as a whole took in the congress.

#### Achievements of the Congress.

Of great importance and variety were the achievements of the Mexican Congress.

For instance, in referring to the Geological Guide Book, prepared under the direction of the Executive Committee, a United States technical journal, *Economic Geology*, said:

"Mexico has during the last decade become the seat of such extensive mining operations that even the most meagre geological information is eagerly welcomed by all geologists and mining engineers, and a publication so thoroughly and carefully prepared as this geological guide must be at once recognized as having an unusual scientific and practical value. Beautifully illustrated, it gives sections and maps of all important mining districts and noteworthy geological features of the various regions covered by the excursions of the Congress. Certain of the papers on economic geology furnish the only available information on more than one district of widely recognized commercial importance.

"Mexico is to be congratulated on having placed in the hands of professional men information so long desired on mining districts whose remote and unknown geological character has in no small measure handicapped successful mining in the regions concerned."

Of the geological map of North America, prepared in co-operation by the United States, Mexico and Canada, the same journal said:

"The second publication which accompanied the guide is scarcely of less importance and value to students of geology. Nothing so comprehensive has ever appeared in the way of geological maps."

(While our guide books and maps cannot be said to deal with areas wholly undescribed, still they put the descriptions in handy form and give a good synopsis of the literature. Will not our publications be as valuable to Canada as were those of the Tenth Congress to Mexico in making known the country's mineral resources and geology?)

The excursions were not less valuable than the publications. They gave members of the Congress exceptional opportunities for becoming acquainted with many of the large and historic mines, the geology, archaeology and numerous other features of great interest in the Republic. (Certain of the congressionists, at least, have shown their interest in the natural resources by making investments in the country and have induced others to do so.)

The published discussions on various geological themes during the sessions have a lasting value.

Not the least of the important results of the Congress was the kindly feeling engendered in the hearts of the visitors towards Mexico and her hospitable people. During the last month it was with feelings of sadness that we read of the partial destruction of that city which Diaz attempted to make, and in many respects succeeded in making, the most beautiful in North America.

We must all admire the achievements of President Diaz, one of the greatest military statesmen of his own or of any age. Weighted with years he had at last to retire. May another leader arise to bring peace and continued prosperity to the great, the beautiful, and the historic country!



