I GEOMETRIC GEODESY

1) Report on Geodetic Work made by the General Directorate of Geography and Meteorology in the Period Running Between 1963 and 1966.

Ing. Horacio Vásquez Glumer,
Chairman of the Department of
Geography.

In a previous report, comprising the period 1959-1963, a description was given of the connection work of geodetic triangulations in the States of Oaxaca and Veracruz, which concluded on the side "Paso de Ovejas-Dos Lomas", located in the latter. Taking advantage of the short distance between both points and the city and port of Veracruz, during the favorable atmospheric season of 1963, surveying work, construction of monuments and observation of angles of a four-sided figure with a central point connected with that side was continued selecting as one of its stations the ancient "Venustiano Carranza" lighthouse (Edificio de Faros), which in its turn is an station of the hydrographic triangulation of Veracruz. In this way, another connection was established between the hydrographic triangulation and the general geodetic system of the country, with reference to the 1927 datum point.

Observation of azimuthal and vertical angles of the four-sided figure with central point presented various difficulties caused by the terrane characteristics, requiring the use of lines very close to its surface, for which reason a wooden tower was constructed to prevent errors in the visual lines. During 1964 and 1965 surveying work was carried out from the side "Cofre de Perote-Acatlán", pertaining to a figure of the parallel 19° 30' lat N triangulation, with a prolongation towards the north linked to the side "Faro de Tuxpan-Temapache" of the Gulf of Mexico triangulation. Surveying operations, visual verifications, construction of monuments and measurements of angles were finished within the predetermined period using a Wild T-3 instrument with 18 positions of the circle. As an average, angle closing did not exceed 1" sexagesimal.

Due to the groyth of Mexico City and other circumstances, various geodetic monuments of the Valley of Mexico triangulation and the cadastral network

of the Federal District have been lost. In order to recover them and to improve the connection figures with respect to the triangulation of the State of Morelos, the hexagon having as a centre the "Aguacate" station and inscribing the whole of its territory, was reoccupied and another station located at Cerro "Los Capulines".

Sketches of both triangulations and a list of geodetic coordinates of the first are presented as follows (Figs. 1 and 2):

Angle	*Latitude*	*Longitude*	*Altitude*
Esperanza	18°52'24".803	96°58'27".440	1577 meters
Dos Lomas	19°08'58".745	96°15'15".774	103
Santa Teodora	19°00'41".483	96°52'57".455	1988
Paso de Ovejas	19°17'19".035	96°26'50".254	142
Vuelta Grande	19°16'23".851	96°17'31".488	137
Simil	19°13'57".528	96°17'58".418	144
Faro de Veracruz	19°12'02".479	96°07'59".363	61
Minas	19°05'34".783	97°16'59".178	4085
Cofre de Perote	19°29'36".455	97°08'51"|411	4247
Acatlán	19°40'57".612	96°51'15".303	2058
Manuel Díaz	19°33'17".665	96°26'50".844	737
Tepeapulco	19°24'52".986	96°47'44".831	1186
Magdalenillas	19°40'50".535	96°57'50".850	2721
Loma Alta	19°45'25".582	96°46'47".233	2262
Cofolite	20°00'16".738	96°50'06".053	763
El Palmar	19°59'22".688	97°08'25".053	560
C. Blanco	20°15'55".504	97°10'44".504	374
Hueytepec	20°17'50".989	97°01'57".371	251
La Montaña	20°22'17".283	97°06'47".458	283
Faro de Tecolutla	20°28'32".265	97°00'15".358	33
San Antonio	20°27'42".979	97°22'03".684	329
C. Polutla	20°31'17".334	97°15'43".685	301
Tronconal	20°31'12".334	97°35'23".795	431
Mozutla	20°36'54".790	97°20'46".817	310
Tihuatlán	20°43'30".229	97°31'12".302	333
Mirador	20°43'20".541	97°16'20".134	123
Tumilco	20°54'01".887	97°19'08".360	72
Huilozintla	20°52'05".415	97°32'56".957	271
Temapache	21°03'26".915	97°38'22".011	328
Faro de Tuxpan	20°58'11".645	97°18'41".523	43

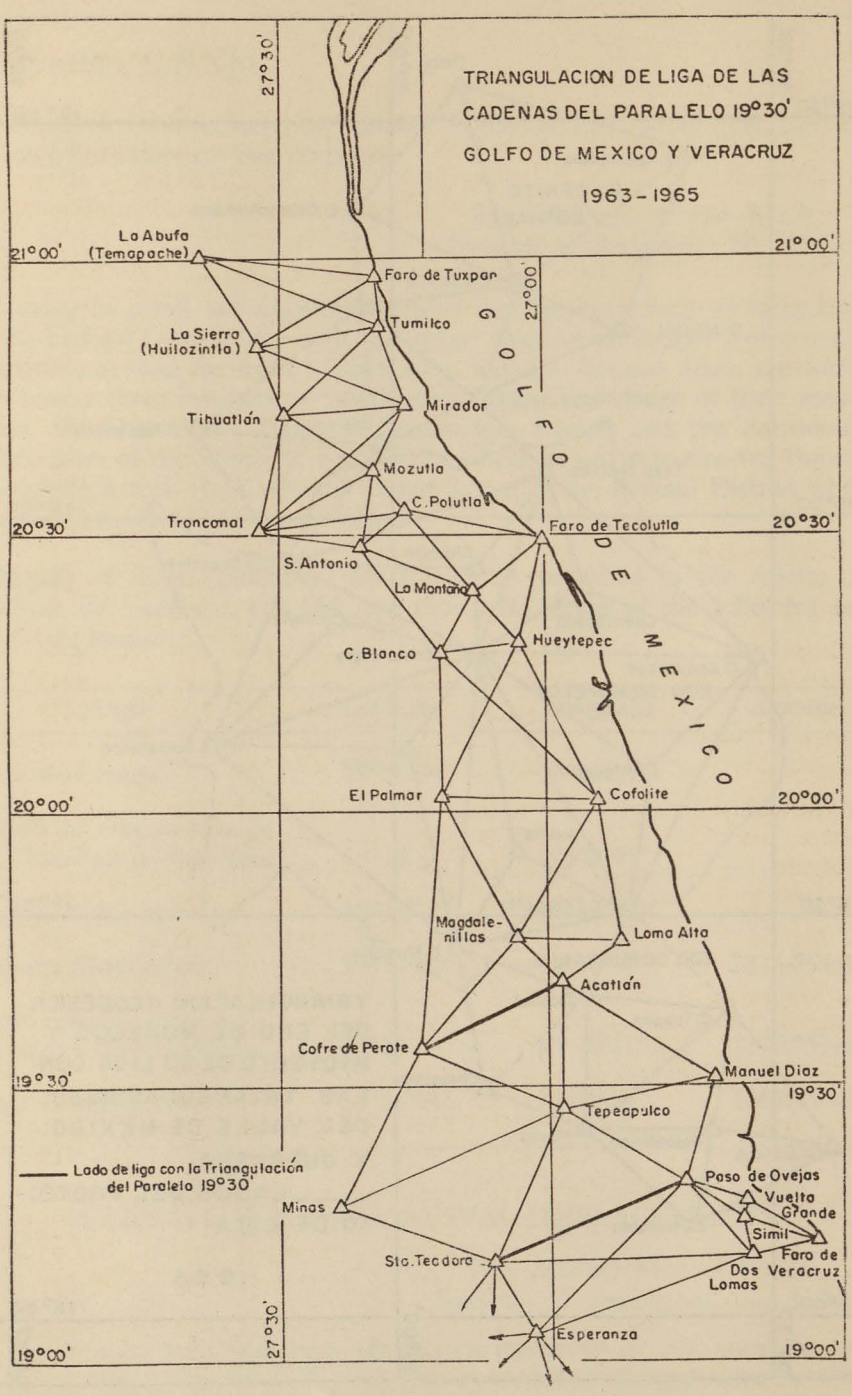

Fig. 1. Triangulation of the State of Veracruz.

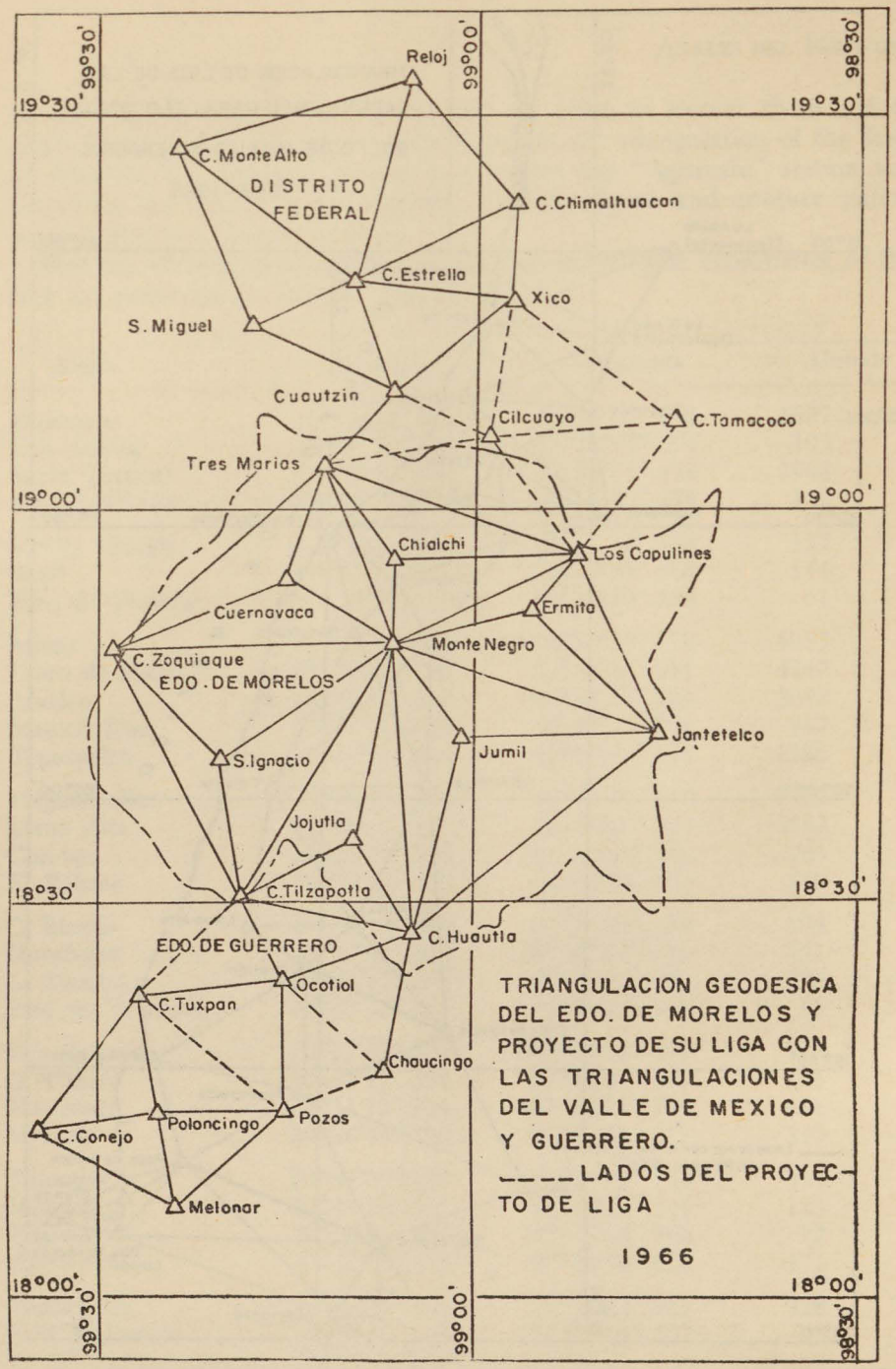

Fig. 2. Geodetic Connection of the State of Morelos and the Valley of Mexico.