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A HISTORICAL NOTE ON THE BOUNDARIES OF NEW MEXICO

BY P. M. BALDWIN

The question of boundaries, being intimately connected with property rights and political jurisdiction, is a prolific source of serious disputes whenever the lines have not been precisely determined. The settlement of such disputes, whether by war, diplomatic negotiation, arbitration, litigation, or legislative action has led to events of major historical importance. Of stubbornly fought contests of this character New Mexico has had its full share.

Under the Spanish and Mexican régimes the need for precise boundaries did not exist. The settlements on the upper Rio Grande and adjacent territory, under the authority of the governor at Santa Fé, were separated from other jurisdictions by broad zones uninhabited by civilized people. But the transfer of sovereignty from Mexico to the United States changed the situation. The aggressive American pioneer would inevitably push out into the unappropriated area and take up every foot of available land. The question arose: Would such settlers be entering upon the public domain of the United States or upon land comprised within the state of Texas?

The western limits of Texas, according to its own claim, were definite enough. They were the Rio Grande to its source, and from there a line drawn due north to the paral-

lel of 42 degrees. Everything between this line and the international boundary, as laid down in the treaty with Spain in 1819, was Texas. But the United States was unwilling to acknowledge so broad a claim, on various grounds. It would have made Texas disproportionately large, compared with even the most extensive states of the Union; it would have thrust a long projection of Texan territory between the public domain in the Missouri basin and the new acquisitions in the Southwest; it would have placed a considerable population of Spanish-speaking people, who had been promised by treaty all the privileges and immunities of American citizens, under a jurisdiction which they regarded with dislike and suspicion; it would have meant handing over to Texas a region which was indubitably a part of New Mexico, for it had been settled and known by that name before Texas was thought of; most important of all, it would have been surrendering to a slave state a vast area of "free soil", much of it lying to the north of the sanctified line of 36-30.¹

The Senate committee, of which Henry Clay was chairman, which drafted the series of measures constituting the famous "Compromise of 1850", proposed as the boundary between Texan and United States territory a line drawn from a point on the Rio Grande twenty miles above El Paso to the intersection of the 100th meridian with the Red river.² (It must be especially remembered in all these discussions that the place referred to as El Paso was the Mexican town of that name, now called Juarez.) Clay himself conjectured that the nearest approximation to a true line would be one drawn from El Paso, or just above it, to the head of the Red river. The line suggested by the Committee, he said, cut off from New Mexico a small triangle

1. For a scholarly analysis of the complex political currents which found their vortex in this famous boundary squabble, see W. J. Spillman, "Adjustment of the Texas Boundary in 1850," in *Quarterly of the Texas State Historical Association*, vol. 7, pp. 178-195.

2. *Cong. Globe*, vol. 21, part 1 (31st Cong., 1st sess.), p. 945.

north of El Paso, but compensated the territory with a much larger triangle further to the north and east. (See map.) The justification for this procedure was that certain settlements above El Paso were said to desire union with Texas, and that the larger triangle, which Texas would lose, was land of dubious value, inhabited only by Indians.³ Texas was further to be compensated for acceptance of this boundary and the relinquishment of its claim to all the country east of the Rio Grande, by a large sum of money, the amount of which the Committee left blank, to be filled in by Congress.

In support of his contention that the true line ran just north of El Paso, Clay cited: first, a decree of the Mexican Congress in 1824, in which the northern boundary of Chihuahua is declared to be a line "drawn from the east to the west of the point, or pueblo, called Paso del Norte;" second, the language of the treaty of Guadalupe Hidalgo, which speaks of the international boundary as going up the Rio Grande and then "along the whole southern boundary of New Mexico (which runs north of the town called Paso)". The Treaty did not state how far north of the town, but Clay thought it was "a league or something less," because, as he explained, the line had been shifted a little from the decree of 1824, so as to place the military post of Paso del Norte within the jurisdiction of the governor of Chihuahua.⁴ It may be noted incidentally that a line could easily be drawn "something less" than a league to the north of this post which would have placed the present town of El Paso, Texas, in New Mexico.

The boundary proposed by the Committee was subjected to severe attack from various quarters. Senator Benton of Missouri declared that it would "cut New Mexico in

3. *Ibid.*, vol. 22, part 2, p. 1262. It is difficult to see how Clay arrived at his conclusion, because a few sentences previously he had stated that by Mexican law, the southern boundary of New Mexico was a line drawn "east and west of the Rio Grande," a little to the north of El Paso.

4. *Ibid.*, p. 1262.

two just below the hips, and give the lower half to Texas, leaving New Mexico to stump it about as best she can, without feet or legs.”⁵ Citing in Spanish the language of the Mexican decree of 1824, “tirada de oriente á poniente del punto ó pueblo llamado Paso del Norte,” he maintained that this had meant a line beginning at El Paso and proceeding thence westwards. East of that town, he contended that the southern boundary of New Mexico should be the Rio Grande as far down as the mouth of the Puerco (Pecos). He flourished a map published by the Texas Land Office which, he averred, proved that the western boundary of the State was the meridian of 102°, beyond which no Texas land titles had been granted. He therefore proposed an amendment that the boundary should be the 102nd meridian from the Rio Grande north to latitude 34°, and then should turn eastward along that parallel till it met the Red river.⁶ This boundary, its proponent declared, would leave Texas a compact state, yet amply large enough to be later divided, should its citizens desire it, into two states, by a line along the 98th meridian and the Colorado river.

Benton's line was the most generous to New Mexico of any of the proposals made in Congress, but his contention that New Mexico extended southwards to the mouth of the Pecos can hardly be sustained. There is no doubt that, in the period preceding the Mexican war, the state of Chihuahua not only included El Paso, but jurisdiction over territory considerably to the north of it, in fact, over land included in what is New Mexico today. The Doña Ana Bend Colony held its title by virtue of a Chihuahua land grant,⁷ although at an earlier period jurisdiction over the region had been exercised from Santa Fé.⁸ If the Committee wished to include in Texas the settlements on the Rio Grande near

5. *Ibid.*, vol. 21, part 2, p. 1381.

6. *Ibid.*, p. 1380.

7. Twitchell, *Leading Facts of New Mexican History*, vol. III, p. 196.

8. Twitchell, *op. cit.*, III, 193.

El Paso, it is difficult to see why it did not go further north and include everything south of the Jornada del Muerto and, if it conceived that the proper line was the boundary between New Mexico and Chihuahua, the facts concerning the land titles would have given it good authority for doing so. On the other hand, it may be pointed out that Texas had no more right to part of Chihuahua than it had to New Mexico. In fact, to prove that San Elizario, Ysleta, and the other settlements on the left bank of the Rio Grande, across from El Paso, had formerly belonged to Chihuahua, would seem to constitute the very strongest denial possible of the Texan claim. This tract simply formed part of the territory obtained from Mexico by conquest and purchase. Of course, if the United States Congress wished to attach this part of the public domain to Texas, it could do so. This, however, would be a grant of additional territory, and is quite at variance with the idea that Texas was being asked to relinquish territory which was rightfully hers and was entitled to a large monetary compensation in consequence.

The Congressional joint resolution, by which Texas was admitted into the Union, had provided for its future division into several states, not exceeding five in number.⁹ Such division would, of course, need the consent of the State and of Congress. Accordingly, it was natural that some legislators should seek to take advantage of this provision to solve the difficulty of disposing of the Texan claim to the satisfaction of all parties. Benton's suggestion has already been noticed. Senator Foote of Mississippi introduced a bill providing for a state of Jacinto to include that portion of Texas lying east of the Brazos, as well as for three territories, namely, New Mexico, Deseret, and California. The boundary between Texas and New Mexico was to be the Rio Grande. Senator Bell of Tennessee proposed that the

9. Thorpe, *Constitutions and Charters*, 59th Cong., 2d sess., House Doc. 357, vol. 6, p. 3545.

parallel of 34° from the Rio Grande to the Red river should be the dividing line between Texas and New Mexico and that south of this line three states be formed, one east of the Trinity, a second between the Trinity and the Colorado, and a third between the Colorado and the Rio Grande.¹¹ He pointed out that the area contemplated as capable of division into five states was evidently the whole area claimed by Texas, and argued that this constituted a recognition by the United States of the full Texan claim at the time of annexation.¹⁰

While these various proposals and counter-proposals were being bandied about in the Senate, the state of Texas was taking measures to assert its authority over the disputed area. Its legislature had passed an act (March 15, 1848), creating a county of Santa Fé, with the following boundaries: "Beginning at the junction of the Rio Puerco with the Rio Grande, and running up the principal stream of the said Rio Grande to its source, and thence due north to the forty-second degree of north latitude; thence along the boundary line as defined in the treaty between the United States and Spain, to the point where the hundredth degree of longitude west of Greenwich intersects Red river; thence up the principal stream of said Red river to its source; thence in a direct line to the source of the principal stream of the Rio Puerco, and down the said Rio Puerco to the place of beginning."¹² The state government sent a commissioner to Santa Fé in February, 1850, to organize the county government, but he met with opposition from the commanding officer of the United States army stationed there. Governor Bell wrote a letter to President Fillmore asking him to disavow this act, but Fillmore was just as firm in maintaining the authority of the Union in 1850

10. *Cong. Globe*, vol. 21, part 1, p. 166. The text of Foote's bill is given on pages 168-171.

11. *Ibid.*, p. 439.

12. *Ibid.*, vol. 22, part 2, p. 1258.

as Jackson had been in 1832. His reply to the Governor was courteous and conciliatory in tone, but quite unmistakable in meaning. In a message to Congress (August 6, 1850), transmitting the correspondence, the President declared that "all must be now regarded as New Mexico which was possessed and occupied as New Mexico by citizens of Mexico at the date of the treaty, until a definite line of boundary shall be established by competent authority." The New Mexicans had been guaranteed certain rights by treaty, and he considered it to be the duty of the Executive to uphold the Treaty as the supreme law of the land.¹³

Fillmore's stand brought down upon his head bitter denunciations from the Southern politicians. In a debate in the House of Representatives, Howard of Texas declared that the President was assuming to declare that territory east of the Rio Grande was not in Texas, and concluded: "It now remains to be seen whether a sovereign State of this Union can be invaded by the Federal Government, and subdued within its own limits by military power and violence. The solution of this question will form an era in the history of this government." Morse, of Louisiana, said that "since the days of the alien and sedition laws, there has been nothing in the history of this country that so completely annihilates every idea of state rights as this very message," and he opposed the printing of a document containing such "monstrous heresies."¹⁴ Stephens of Georgia also addressed the House at great length, strongly condemning the presidential message.¹⁵ Meanwhile, in the Senate, Henry Clay warned his colleagues that a clash between Texan and United States troops would be the signal for civil war,¹⁶ and Daniel Webster said that of all the matters

13. *Ibid.*, vol. 21, part 2, p. 1525.

14. *Ibid.*, p. 1528.

15. *Ibid.*, vol. 22, part 2, pp. 1080 *et seq.*

16. *Ibid.*, p. 1412.

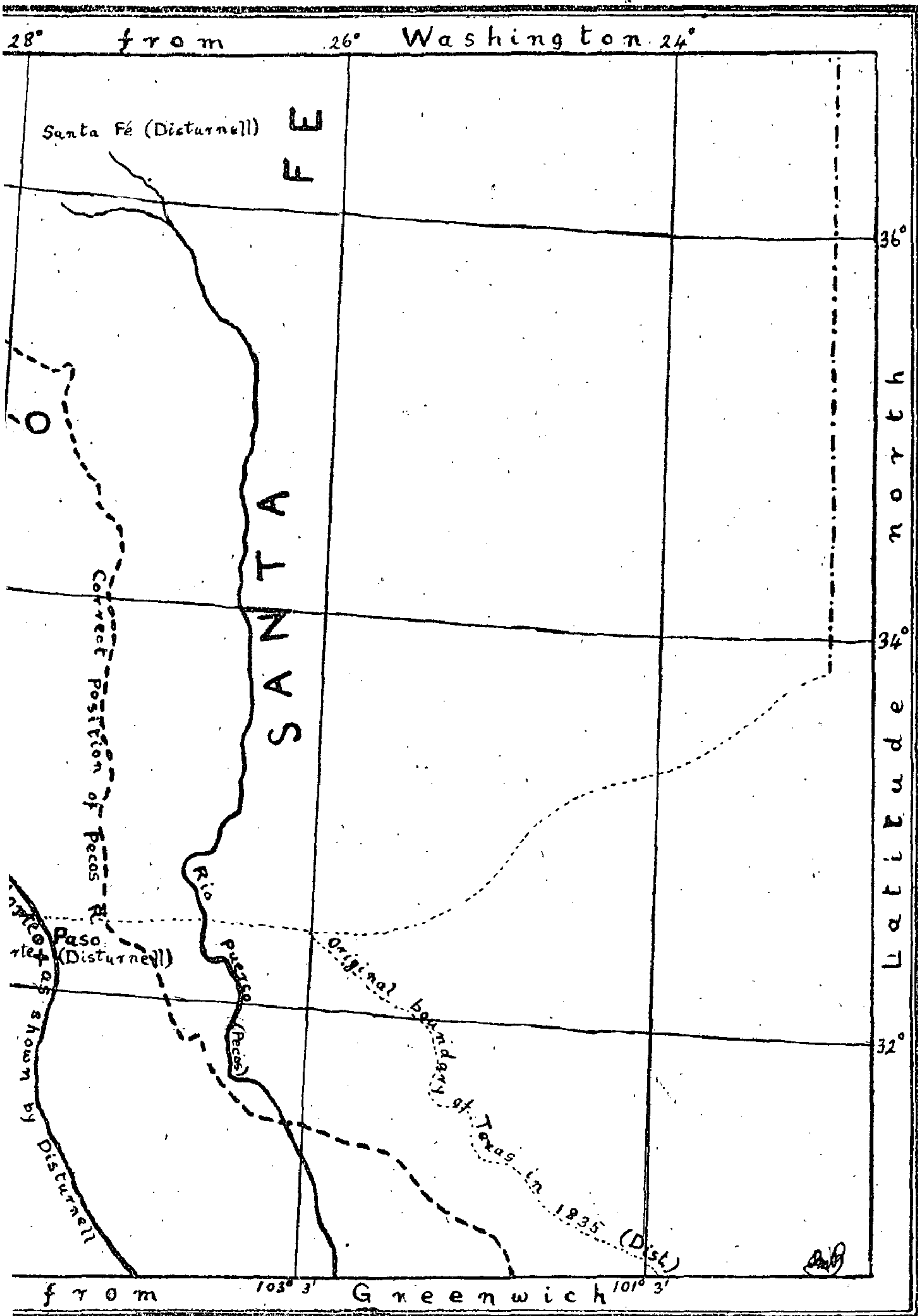
then before Congress, the Texas-New Mexico boundary was the most important "because most immediately menacing evil consequences."¹⁷

The crisis undoubtedly hastened action on the boundary, yet the line proposed by the compromise committee was doomed to be defeated. Extremists on both sides combined in voting for a motion offered by Senator Pearce of Maryland, to strike from the compromise bill all that related to New Mexico and Texas. Pearce then presented a bill of his own, which laid down the present boundaries.¹⁸ This bill passed the Senate on August 9 and the House on September 6, and so the vexed question of the Texas-New Mexico boundary was at last disposed of — except for the rather important detail of marking it on the ground. Of this, more will be said below.

Of all the various boundary proposals put forward in 1850, this one which was finally adopted drew the most inconvenient and illogical line. It gave to Texas a shape as peculiar as a gerrymandered country. Northward the "pan-handle" projected nearly, but not quite, to the southern boundary of Kansas, leaving room for the "no man's land" that later became the grotesque elongation of Oklahoma. The triangular extension westward, with El Paso at its furthest limit, belongs to the region of the high plains and is geographically, economically, and historically connected with southern New Mexico, yet the parallel of 32°, for no particular reason, throws this natural area into two political jurisdictions. In this respect the Committee's line would have been only a slight improvement. Benton and Bell's proposals would have avoided this particular difficulty, but Bell's state between the Colorado and the Rio Grande, stretching from near Socorro clear down to Brownsville, would have been a long, straggly affair. Taking later developments and the geography of the country into consideration, the

17. *Ibid.*, p. 1267.

18. *Ibid.*, vol. 21, part 2, p. 1520. See also Spillman, *op. cit.*, p. 193.



BOUNDARY UNDER TREATY OF GUADALUPE HIDALGO

unprejudiced thinker would probably come to the conclusion that Benton's suggested division of the region was the most sane and statesmanlike of any.

Pearce's boundary bill had been amended in the House to provide for the erection of a territory of New Mexico. The act so amended received the sanction of the President on September 9, 1850. The new territory might have been curtailed to the south and east in favor of Texas, but it was extended on the west to the limits of California. Between Texas and California it was bordered on the south by the Republic of Mexico and its boundary therefore coincided with the international boundary. In the language of the treaty of Guadalupe-Hidalgo, this line, after leaving the Rio Grande, was to run "westwardly, along the whole southern boundary of New Mexico (which runs north of the town called Paso) to its western termination; thence, northward along the western line of New Mexico, until it intersects the first branch of the river Gila; thence down the middle of the said branch and of the said river, until it empties into the Rio Colorado." The Treaty further stated that "the southern and western limits of New Mexico," thus referred to, were to be those laid down in a map of Mexico published in New York by J. Disturnell in 1847.¹⁹ On this map the boundary of New Mexico was shown as leaving

19. Malloy, William M., *Treaties, Conventions, etc.*, 61st Cong., 2d sess., S. Doc. 357, vol. I, p. 1110. There is a facsimile of the relevant portion of the Disturnell map in the pocket of U. S. Geol. Survey Bull. 689.

The map at page 125 reproduces the relevant features of the Disturnell map, to which have been added the positions of the same features as shown on a modern map, and lines showing the claims of the two countries.

Since the Disturnell map was chosen by the treaty-makers to govern the placing of the international boundary, it may be supposed that it represented the best geographic knowledge of the region obtainable at the time. It may therefore fairly be taken as throwing some light on the vexed question of the Texas-New Mexico boundary. The name NUEVO MEJICO O SANTA FE (*sic*) has been placed exactly where Disturnell had it. It will be noted that the southern boundary of this province is marked — in a rather indefinite way, it is true — continuing *eastward* from the Rio Grande to join the old international boundary on the 100th meridian. This would support the line proposed by the Compromise Committee, but apparently the Disturnell map was not used as evidence in the senatorial debate.

the Rio Grande in latitude $32^{\circ} 22'$, proceeding westward for three degrees, and then turning northward at about longitude $107^{\circ} 43'$. However, the map was highly inaccurate in its location of many of the geographical features, and this gave room for argument that the boundaries were similarly misplaced. Its inaccuracy may be appreciated when we realize that if the Rio Grande could be shifted to where Disturnell had it, it would be in the valley of the Pecos, and El Paso would be in the vicinity of Carlsbad cavern. The extent of the error can be seen from the following:

Geodetic position of El Paso (Juarez)

	On Disturnell map	Actual position
Latitude, north	$32^{\circ} 15'$	$31^{\circ} 44'$
Longitude, west	$104^{\circ} 39'$	$106^{\circ} 29'$

Thus, the actual position of El Paso is over half a degree further south and nearly two degrees further west than as Disturnell showed it. Therefore, if the boundary were surveyed on the ground so as to preserve the same relative position to the town as given by the map, the boundary itself would have to be correspondingly moved to the south and west. This solution would be the one most favorable to the United States, whereas a determination based on the projection lines shown on Disturnell's map would be the best for Mexico. The difference was about as follows:

	Southern boundary	Western boundary
On Disturnell map	$32^{\circ} 22'$	$107^{\circ} 43'$
With reference to El Paso	$31^{\circ} 51'$	$109^{\circ} 33'$

The Treaty provided that the United States and Mexico should each appoint a commissioner and a surveyor to run the line. As it was impossible for these men to determine any line which was strictly in accord with the terms of the Treaty, the two commissioners, Bartlett and Condé, on December 25, 1850, agreed to a compromise; namely that the initial point on the Rio Grande should be in lati-

tude $32^{\circ} 22'$, that the line should be run thence westward for three degrees, and then due north till a branch of the Gila river was encountered.²⁰ This arrangement made the "southern limit" in favor of Mexico and the "western limit" in favor of the United States. As the Bartlett-Condé line left the Rio Grande just about opposite the present town of Las Cruces, it will be seen that it abandoned to Mexico the town of Mesilla (then on the west side of the river) and a strip of fertile land in the Mesilla valley. On the other hand, it preserved for the United States the rich mining region in the vicinity of Silver City, and Bartlett believed that he had made an advantageous agreement. But a more important interest than mining was involved. The most practicable route for a Pacific railroad — the one with the easiest grades and the only one free from the menace of snow — lay through southern New Mexico and the agreement was believed to prejudice this route.²¹ When the American surveyor Gray put in his appearance — seven months after the agreement had been made and when part of the line was already run — he refused to recognize it, and was supported in his stand by Graham, the astronomer, and by Emory, who succeeded him.²² This action precipitated a debate on the question in Congress, and the interests opposed to the Bartlett-Condé agreement were successful in getting an amendment tacked on to the appropriation bill of August, 1852, which deprived the boundary commission of funds "until it should be made to appear to the President of the United States that the southern boundary of New Mexico had not been established further north of El Paso than is laid down in the Disturnell map." In accordance with this provision, Fillmore decided that the

20. Bartlett, J. R., *Personal Narrative*, vol. I, pp. 201-3.

21. *E. g.* see *Cong. Globe*, vol., 25, part 1 (32d Cong., 1st sess., App.), p. 777, where Representative V. E. Howard of Texas alludes to this point in strongly condemning Bartlett for making the agreement.

22. Rippey, J. Fred, *The United States and Mexico*, p. 110.

funds could not be used, and the commission was obliged to discontinue operations.²³

The events which followed this action led to a serious international situation. Governor Lane of New Mexico decided to assert his jurisdiction over the contested area. Advancing to Doña Ana he there issued a proclamation declaring that Mesilla belonged to New Mexico, and mailed a copy to Angel Trias, governor of Chihuahua. The latter sent a bellicose reply and prepared to resist Lane's claim by military force.²⁴ As a result the little town of Mesilla blossomed for a time into front-page prominence and the newspapers of both countries were filled with discussions of a probable renewal of the war. However, even if the United States had secured the line for which it contended, it would really have made little difference as far as the route for a railroad was concerned, since it would in any case have had to run north of the Gila. What was wanted was additional territory, and James Gadsden was sent to Mexico City to purchase it. His mission resulted in the treaty of December 31, 1853, which secured for the United States an important strip of territory between the Rio Grande and the Colorado river, all of which was at the time added to New Mexico.²⁵ It rendered irrelevant all further dispute concerning the proper location of the line under the treaty of Guadalupe-Hidalgo.

The new boundary established by the Gadsden treaty, that is, the section which deviated from the former treaty, provided for a line leaving the Rio Grande in latitude 31° 47', proceeding westward for one hundred miles, then turning due south to latitude 31° 20', westward along that parallel to its intersection with the 111th meridian, thence in a straight line to a point in the Colorado river twenty miles below its junction with the Gila, and up the channel

23. Rippey, *op. cit.*, pp. 111-3.

24. Rippey, *op. cit.*, p. 118.

25. Malloy, *op. cit.*, pp. 1121-2. U. S. Statutes at Large, vol. 10, p. 575.

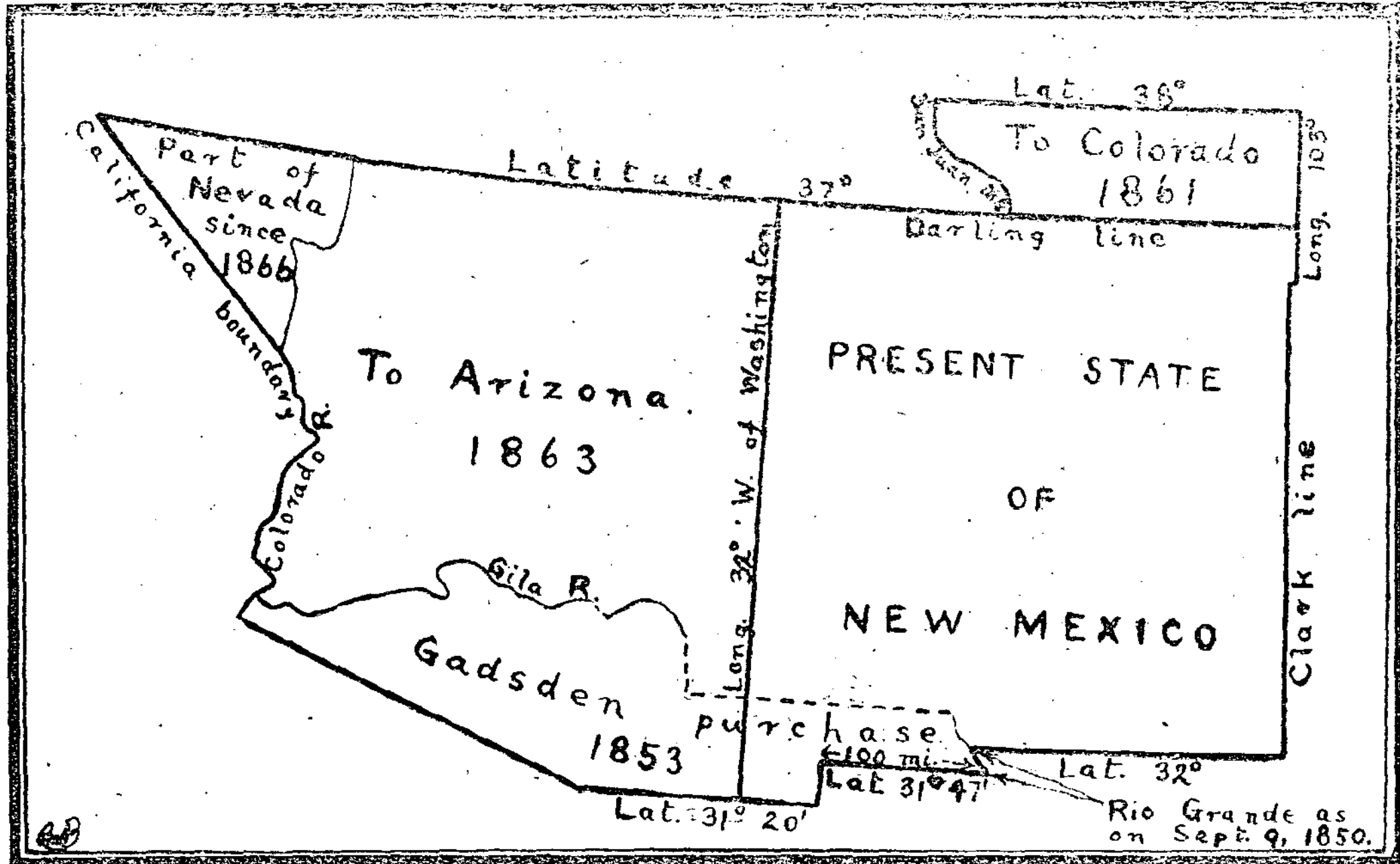


DIAGRAM SHOWING CHANGES IN SIZE AND BOUNDARIES OF NEW MEXICO

of the Colorado to the said junction. This line was run and marked by an international joint commission in 1855, Major Emory being the American commissioner and Señor Salazar the Mexican.²⁶ It was necessary for the surveying parties to be protected by military escort for fear of Indian attack. In the course of time many of the monuments along the line became obliterated, so a convention was concluded with Mexico in 1882, and renewed in 1889, for the re-survey of this portion of the international boundary. This work was done in 1891 and durable monuments erected.²⁷

Let us now return to the Texas-New Mexico boundary and see how its actual survey on the ground was carried out. In 1853 the United States and Texas each appointed a commissioner to cooperate in running the line.²⁸ The United States commissioner was John H. Clark and the Texan, William R. Scurry. These men started work, with their party, in January, 1859. Their initial point was the intersection of the Rio Grande with the parallel of 32°. They established the position of this point by connecting it with Frontera, an astronomical station established by the international boundary commission in 1850. From the initial point on the river they then carried the line of 32° eastward for 211 miles, mostly by chaining, but partly by triangulation. The termination of this long line was assumed to lie on the 103rd meridian and was established as the south-east corner of New Mexico. In the meantime Scurry had withdrawn from the work, so Clark went on and finished it alone. Turning northwards, he surveyed for some distance along the supposed meridian of 103°, and then, owing to lack of water, decided to change his plans; namely, to establish the northwest corner of Texas and

26. Emory's report on this survey is given in 34th Cong., 1st sess., House Ex. Doc. 135, 4 vols., Washington, 1857.

27. The report on this survey is contained in 55th Cong., 2d sess., S. Doc. 247, Washington, 1898.

28. Baker, Marcus, *The Northwest Boundary of Texas*, U. S. Geol. Survey Bull. 194, p. 15.

thence to survey the 103rd meridian southward. This he accordingly did, transferring his longitude from a point established on the Kansas boundary, one-half degree north of his new initial point. He then ran the line southward, apparently for about 172 miles, but left an unmarked gap of about 69 miles between the part surveyed from the northern and that surveyed from the southern end.²⁹ He made some observations for longitude at Rabbit Ear Creek, near the northeast corner of Texas, but in the hurried closing of his work apparently did not work up his results. In this connection it must be borne in mind that before it became possible to transmit instantaneous time signals by telegraph, the determination of longitude was a very tedious and difficult process and even then not perfectly reliable. The longitude of Frontera, upon which Clark's establishment of the south-east corner of New Mexico rests, was determined by Major Emory by a long series of observations of moon culminations extending over four lunations (January to April, 1852). Only a very well equipped commission could afford to make observations of that character. However, if Clark had worked up the observations he did make, he might have discovered that his line was too far to the west. It is now known that the northern section of the line is in longitude $103^{\circ} 02' 13.80''$ and the southern part in $103^{\circ} 03' 55.02''$. This means that Clark's errors deprived New Mexico of a strip of land 310 miles long and from about two and a half to four miles wide, roughly half a million acres. Some of it is not worth much, but the towns of Farwell and Texline are situated within it and it runs adjacent to valuable oil fields, so that its value for assessment purposes may be considerable.

29. Douglas, E. M., *Boundaries, Areas. . . . of the United States and the Several States*, U. S. Geol. Survey Bull. 689, p. 154. The text says the unmarked gap was 116 miles; the number 69 is given in an erratum slip accompanying the bulletin. Baker, op. cit., p. 19, makes it 130 miles, but a reproduction of Clark's general map, which is bound in with Baker's article, confirms the 69 miles which Douglas gives as his final figure. This is further in agreement with the gap of one degree of latitude assumed by the Scott-Cockrell commission in 1911.

As New Mexico was not a state at the time the Clark survey was made, the line needed only to be ratified by the United States and Texas to become the legal boundary. It was accepted by the United States in an Act of Congress passed March 3, 1891, and by a joint resolution of the Texas legislature on March 25 of the same year. However, because the New Mexico constitutional convention in 1910 adopted a clause which stated that the boundary was the 103rd meridian, a joint resolution of Congress (approved February 16, 1911) was passed, which declared that the lines laid down by Clark were the legal boundary and that any provision of the New Mexico state constitution to the contrary was null and void.³⁰ Not satisfied with this, Congress inserted in the joint resolution admitting New Mexico and Arizona to the Union (August 21, 1911) a clause requiring New Mexico's acceptance of the Clark lines as a condition of admission.³¹

The act of February 16 had further provided for a new United States-Texas boundary commission, to resurvey the boundary and to re-establish the Clark lines. Accordingly, in 1911 the Scott-Cockrell commission, as it was called from its leading members, identified monuments placed by Clark at the north-west corner of Texas and at the south-east corner of New Mexico. From the former point a line was run south to the 34th parallel, and from the latter north to the 33rd. The intervening gap of one degree was bridged by a straight line joining the two terminal points; it bears N. 1° 00' 42" E. The 32nd parallel boundary was also re-surveyed at this time, and its length was found to be a little over 209 miles.³² The Scott-Cockrell re-establishment of the Clark survey was approved by executive order dated February 25, 1913.

30. U. S. Statutes at Large, vol. 36, part 1, pp. 1454-5.

31. *Ibid.*, vol. 37, part 1, p. 39.

32. Douglas, *op. cit.*, p. 155.

The formation of Colorado territory in 1861 led to a reduction of New Mexico on the north-east. Prior to this reduction, the northern limit, from longitude 103° west to the summit of the Sierra Madre (San Juan mountains), was the parallel of 38° . The line then turned south and east, following the crest of the mountains, to latitude 37° and then went west along that parallel.³³ The new northern boundary was to be latitude 37° all the way. By this reduction New Mexico was deprived of the important coal-mining region around Trinidad and Walsenburg, and also of jurisdiction over the headwaters of the Rio Grande.

The Colorado-New Mexico line was surveyed by E. N. Darling in 1868, presumably on the 37th parallel, but he did not succeed in getting the line straight (if the expression "straight" can be used of a line on the earth's surface). Near Edith, Colorado, there is a jog in the line of nearly half a mile. In 1901 a re-survey in this vicinity was undertaken by the authority of the State of Colorado, but this was not binding on New Mexico. In 1902 Congress authorized a re-survey of the entire line between Colorado on the one hand and Oklahoma and New Mexico on the other. This survey was carried out by H. B. Carpenter and accepted by Congress as the legal boundary, only to meet with the veto of President Roosevelt. The Carpenter line is considerably north of the Darling line in some places and south of it in others.³⁴ This situation has led to a legal dispute between Colorado and New Mexico before the United States Supreme Court. According to a letter received by the writer from the District Cadastral Engineer (dated May 1, 1929), the decision of the Court is that Darling's line must stand as the legal boundary.

33 . Douglas, *op. cit.*, p. 202. The erratum slip changes "Saguache" to "San Juan" mountains, and further says: "Change western boundary of New Mexico north of latitude 37° so as to include the Rio Grande drainage basin."

34. Douglas, *op. cit.*, p. 200.

A second reduction of New Mexico was made in 1863 when the territory of Arizona was erected. (A portion of the area thus cut off was later surrendered by Arizona to Nevada.) The line between the two territories was made the 32nd meridian west of Washington. By an act of Congress of September 28, 1850, it had been ordered "that hereafter the meridian of the observatory at Washington shall be adopted and used as the American meridian for all astronomic purposes." The act was repealed August 22, 1912, but wherever meridian lines are used to define boundaries originally fixed between these dates, they will be found to be measured from Washington. The old naval observatory at Washington was $77^{\circ} 03' 02.3''$ west of Greenwich.³⁵ Hence, the boundary between Arizona and New Mexico is $109^{\circ} 03' 02.3''$ west of Greenwich. If Congress had not passed the act above referred to, it is probable that the line would have been made the 109th meridian, so the act gained New Mexico a strip over three miles wide along its whole western side. (On the other hand, New Mexico is fortunate that it so narrowly escaped having its eastern boundary defined by a Washington meridian. The act was passed only 19 days after the settlement of the Texas boundary. As it turned out, however, Clark's error placed the line approximately on the 26th meridian west of Washington, which is the line Congress might have been expected to use). The Arizona-New Mexico line was surveyed in 1875 under the direction of the General Land Office. Although the monument erected at the northern termination of this line is 1 mile 45 chains east of the mark established by Darling for the south-west corner of Colorado, it was nevertheless taken as the initial point by a party surveying the Colorado-Utah boundary in 1885, and thus described at that time. "A stone 7 feet by 12 by 6 inches set 3 feet in the ground, and marked on the northeast face

35. U. S. Statutes at Large, vol. 9, p. 515, and vol. 37, part 1, p. 342.

“COLO 37° N L,” on the southeast “N MEX 32° W L,” on the southwest “ARIZONA,” and on the northwest “UTAH 1875.”³⁶ It is remarkable as the only point in the United States which is the common corner of four states.

The short boundary between New Mexico and Oklahoma is known as the Cimarron meridian. It was established in 1881 by Messrs. Chaney and Smith, U. S. surveyors, by their own independent determinations of latitude and longitude.³⁷ Their work seems to have been done with commendable accuracy, although their establishment of the north-east corner of our State had later to be moved 14.11 chains further south. This corner has been recently determined by the U. S. Coast and Geodetic Survey to be in latitude 37° 00' 00.645". In other words, the latitude of this corner is practically correct and the longitude is 6.75" (approximately 0.1 mile) too far west. The south end of this Cimarron meridian is 2 miles 14.65 chains east and 5.47 chains north of the northwest corner of Texas, as established by Clark, which explains the jog in our eastern boundary, so evident on inspection of the map.

There remains to be considered only the short length of the State boundary between the parallels of 32° and 31° 47', where the line between Texas and New Mexico is defined by law to be “the channel of the Rio Grande, as it existed on the 9th day of September, 1850.” The river has shifted its channel considerably since that date. Shortly after New Mexico became a State, a suit was instituted by New Mexico against Texas in the Supreme Court of the United States to have the proper boundary judicially determined. The court appointed a special master to investigate the problem and make a report. The evidence taken covers 3,500 pages, supplemented by about 200 maps, photographs, etc. The case dragged on for many years and a

36. Douglas, *op. cit.*, p. 201.

37. Baker, *op. cit.*, pp. 28-9. Further information derived from letter to the writer from the General Land Office, dated May 10, 1929.

decision was not rendered till December 5, 1927. It sustained the contentions of the State of Texas at all points. Samuel S. Gannett, a geodetic and astronomic engineer, was appointed by the Court to survey the line, and this survey is now going forward.³⁸

The most important evidence as to the location of the river in 1850 is a survey made along its west bank by a Mexican engineer named Diaz in 1852, by order of Salazar, astronomer of the Mexican commission appointed to assist in running the boundary under the treaty of Guadalupe-Hidalgo. According to the decision of the Court, the river is to be assumed to have been 300 feet wide, so that the center of its channel would be 150 feet east of the Diaz-Salazar line, or 150 feet west of certain Texas surveys made along the left bank in 1849 and 1860. At the 32nd parallel the river is to be taken as having been 600 feet west of Clark's monument No. 1, established by him in 1859 and re-established by the Scott-Cockrell commission in 1911. Mr. Gannett's task is to determine from these data, as nearly as it can now be done, the location of the channel of the river in 1850. The Gannett line, if approved by the Court, will then become the official boundary. The effects of this decision are likely to be important.

Although Texas won the case at law, it is expected that 2100 acres of land, now on the tax rolls of El Paso county, Texas, will be put into Doña Ana county, N. Mex., whereas only 300 acres, now in New Mexico will be thrown into Texas. The lands expected to go to New Mexico contain some valuable real estate. According to the *Rio Grande Farmer* (Las Cruces, N. Mex.) of September 26, 1929:

The new boundary line being run by Samuel Gannett, special boundary commissioner for the United States Supreme Court, throws the new \$5,000,000 plant of the El Paso Electric Company, the seed house at the Spear's Oil

38. U. S. Supreme Court, *State of New Mexico v. State of Texas*, No. 2 Original, October term, 1927.

Mill, and about 2100 acres of land into New Mexico at Texas' expense. From 300 to 500 acres of the disputed lands go to Texas. It is estimated that the increased assessments will add about \$33,000 to Doña Ana county's tax rolls.

The new line will divide farms and, in some instances, buildings, throwing one-half in Texas and one-half in New Mexico. Concrete markers will be set at each angle of the boundary.

A study of state boundaries shows the importance of the science of astronomy and its practical application in geodetic surveying. Important political and proprietary interests depend upon the accuracy with which the surveyor performs his task. The original surveys of our State boundaries, which were accepted as the legal lines, were made when the methods and instruments in use did not permit so high a degree of accuracy as is now the case. In view of this fact, and the human failing to be sometimes a little careless, it is not surprising that the actual boundaries do not correspond exactly with those laid down by law. The following is a reasonably accurate description of the boundaries of New Mexico as they actually exist:

Beginning at a point in north latitude $37^{\circ} 00' 06.745''$ and longitude $103^{\circ} 00' 06.777''$ west of Greenwich; thence south for one-half degree following the Cimarron meridian established by Chaney and Smith in 1881; thence west 2 miles 14.65 chains, south 5.47 chains, to the north-west corner of Texas in latitude $36^{\circ} 30' 01.603''$, longitude $103^{\circ} 02' 28.177''$; thence south along the line surveyed by Clark in 1859 and re-established by the Scott-Cockrell commission in 1911 to a point in latitude $31^{\circ} 59' 58.02''$, longitude $103^{\circ} 03' 55.52''$; thence west again following the said surveys, along the reputed parallel of 32° , to a point 600 feet west of Clark's monument No. 1, as re-established by the Scott-Cockrell commission; thence southerly, following the line now being established by Samuel Gannett as the channel of

the Rio Grande on September 9, 1850, to a point in latitude $31^{\circ} 47' 01.608''$, longitude $106^{\circ} 31' 45.109''$; thence, following the line surveyed by the international joint commission in 1855 and re-established in 1891, west for 100 miles, then south to the parallel of $31^{\circ} 20'$, then west again to the 32nd meridian west of Washington ($109^{\circ} 03' 02.3''$ west of Greenwich); thence north along the said meridian, as established by the surveyors of the General Land Office in 1875, to its intersection with the 37th parallel; thence east along the said parallel, as marked by Darling in 1868, to the point of beginning.³⁹

39. The geodetic positions given in this paragraph were supplied to the writer by courtesy of the General Land Office.