

east to west, indicated on the index map. (Fig 1). It includes sections 3, 1, and 4. Of these, section 1 was measured by the author, sections 3 and 4 by McKee.<sup>5</sup>

The second group is the north group of the east-west sections. This group includes sections 3, 2, and 5. Section 3 was measured by McKee, section 2 by the author, and section 5 by Pattison.<sup>6</sup>

The third group consists of two north-south sections.

*Lateral Changes*.—Lateral changes are evident in each of these groups of sections, especially in the beta member. Both the north and south groups of east-west sections show the following changes eastward: (1) decrease in thickness (with the exception of section 2), (2) development of dolomites in the easternmost sections, (3) decrease in the amount of bedded chert, and (4) increase in sandiness. This last characteristic is not a marked one. As pointed out by McKee, the shoreline of the Kaibab sea at its maximum development was to the east of the area studied; these lateral changes in facies then are a function of the gradual shoaling of the sea in that direction, plus the entrance of other factors, such as change in salinity, attendant upon an approach to the flanking land mass.

The two north-south sections also show lateral changes. They are (1) an increase in thickness and (2) an increase in sandiness from south to north. The sections are relatively close to each other and the number of sections is too small to establish any significance in these variations.

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## THE ESTABLISHMENT OF THE HOPI RESERVATION, AND SOME LATER DEVELOPMENTS CONCERNING HOPI LANDS.

By VOLNEY H. JONES<sup>1</sup>

THE HOPI INDIAN Reservation was established by an executive order consisting of only a single sentence, as follows:<sup>2</sup>

Executive Mansion, December 16, 1882

It is hereby ordered that the tract of country in the Territory of Arizona, lying and being within the following-described boundaries, viz., beginning on the one hundred and tenth degree of longitude west from Greenwich, at a point 36° 30' north, thence due west to the one hundred and eleventh degree of longitude west, thence due south to a point of longitude 35° 30' north, thence due east to the one hundred and tenth degree of longitude, and thence due north to the place of beginning, and the same is hereby, withdrawn from settlement and sale, and set apart for the use and occupancy of the Moqui and such other Indians as the Secretary of the Interior may see fit to settle thereon.

CHESTER A. ARTHUR

The "Moqui" referred to are, of course, the group now known as the Hopi. The full official designation at that time was "Moqui Pueblo Indians" and the reservation became known as the "Moqui Pueblo Reservation." The name of the group was changed officially to Hopi in 1900,<sup>3</sup> and since that time the reservation has been called the Hopi Indian Reservation.

Although the actual order for the reservation was signed by President Arthur on December 16, there is evidence that action had been pending for several months. The report of the Commissioner of Indian Affairs published late in 1882, contains a map showing a reservation proposed for the Hopi.<sup>4</sup> It is shown in shaded outline, which the caption interprets as "Lands to be established as Indian Lands." This proposed reservation was somewhat larger than that actually established by the executive order, extending farther southward with its southwestern corner abutting on the Little Colorado River. Had the reservation been set up as proposed, it would have included most of the Hopi Buttes area and would have been some fifteen or twenty miles closer to the present railroad and highway. But this proposal was revised, and in the

1. Curator of Ethnology, Museum of Anthropology, University of Michigan.

2. Ann. Rept. Comm. Ind. Aff. for 1883, p. 221.

3. Ann. Rept. Comm. Ind. Aff. for 1900, pp. 51 and 519. For a discussion of the terms Hopi and Moqui and their relative appropriateness, see Brew, 1949, pp. xxiii-xxiv.

4. Ann. Rept. Comm. Ind. Aff. for 1882, frontispiece map.

(5) McKee, E. D., op. cit., pp. 183-184, 186-187.

(6) Pattison, H. M., op. cit.

annual report of the Commissioner for 1883, a map shows the reservation as it was described in the executive order.<sup>5</sup>

By the executive order, the specified land was "withdrawn from settlement and sale" and set apart for the "use and occupancy" of the Hopi. Administration of this area was placed tacily in the hands of the Secretary of the Interior. This was the extent of the action taken. In effect, however, it withdrew this land from the public domain and constituted the setting up of an Indian reservation which was subject to the laws and regulations affecting Indian lands. The phrase in the executive order "and such other Indians" was a conventional one usually included in such orders. There is no indication that there was in mind any specific intention of placing other Indians with the Hopi.

The Hopi were more fortunate than many other tribes which were removed from their aboriginal lands to unfamiliar areas. Their reservation was drawn about them, permitting them to occupy their traditional homeland. Royce shows on a map, what is purported to be the country claimed by the Hopi "at the beginning of their relations with the U. S."<sup>6</sup> This map shows the Hopi claim as an area between the Jeddito Wash and the Dinnebito Wash, extending from the Little Colorado River at the southwest to an arc north of the Hopi mesas. Unfortunately, Royce does not offer any documentation as to the occasion on which this claim was presented. Page offers an interesting discussion of Hopi land claims and land use.<sup>7</sup> He describes what he terms the "basic home land" of the Hopi and has maps showing this area. The area included is essentially the same as on Royce's map, except that the southern extension to the Little Colorado is omitted, the boundary being northeast of the present site of Leupp.

The executive order set aside for the Hopi a rectangle of land with one degree of longitude as its east and west sides, and one degree of latitude as its north and south sides. This rectangle is roughly 70 miles from north to south, and about 55 miles from east to west. The area is listed officially as containing 3863 square miles or 2,372,320 acres.<sup>8</sup> Within this area is included most of the Hopi claim as outlined by Royce, and all of that described by Page. The reservation boundaries encompassed most of the land and other resources of immediate interest to them, and on which their traditional pursuits could be carried out. Their range was reduced somewhat, theoretically, insofar as outlying resources and sacred areas were concerned, but the lines drawn included

5. Ann. Rept. Comm. Ind. Aff. for 1883, frontispiece map.

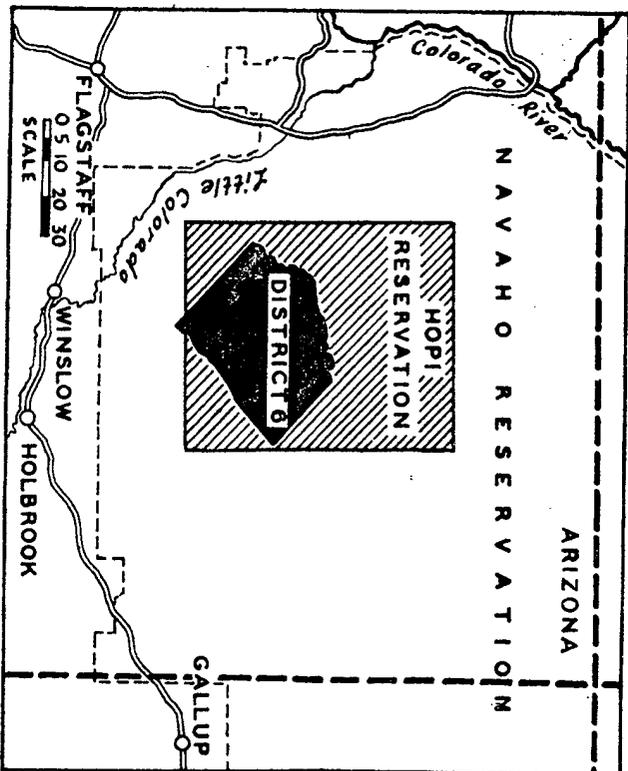
6. Royce, 1899, pp. 922-923 (under "Moki"), and map Plate 111.

7. Page, 1940.

8. In the Ann. Rept. Comm. Ind. Aff. from 1883 to 1890, the area was listed as 8920 square miles and 568,000 acres. Since 1891 the figures given have been those in the text above.

their mesas, villages, clan lands, more essential water supply, and nearby shrines.

Although the establishment of the reservation permitted the Hopi to remain in their original domain, it did not grant them title to the land. The executive order did not recognize any right of ownership to the land by the Hopi, considering it rather as part of the public domain. Although the Hopi and the Zuni are Pueblo Indians, the Spanish land grants made to the "Pueblos" did not apply to these isolated western Pueblos. The eastern Pueblos hold their land by Spanish title, transferred by Mexico, and recognized by the United States.<sup>9</sup> The executive order simply set aside land for the "use and occupancy" of the Hopi. Reservations thus set up by executive order formerly had at best a rather tenuous legal basis, but the General Allotment Act of 1887 by its language recog-



*Northeastern Arizona showing the Hopi Indian Reservation established by Executive Order in 1882, and Land Use District 6, to which the Hopis are now confined.*

nized that all Indian reservations have equal validity and status, whether set up by treaty, act of Congress, or by executive order. This interpretation has been sustained by court rulings.<sup>10</sup>

The Hopi were among the last tribes to receive a reserva-

9. Cohen, 1945, pp. 383-400.

10. The history and status of executive order reservations treated by Cohen, 1945, pp. 299-392.

tion. It may be of some interest to examine the apparent reasons for their neglect, and the considerations which seem to have brought about the decision to give them the protection of a reservation.

The Hopi country had come under the custody of the United States along with the territory acquired by military action in 1846, and ceded by Mexico in 1848. Offices for the administration of the Indians of this new area were established in Santa Fe. Between there and the Hopi intervened some 250 miles of rugged country and the troublesome Navajo. The early reports of that office indicate that, due to their remoteness and inaccessibility, the existence of the Hopi was little more than a vague rumor to them. It was not until after the subjugation of the Navajo, their internment, and settlement on a reservation in 1868, that officials could look past them to the Hopi for the first time.<sup>11</sup>

After the Navajo were resettled, the Hopi were promptly inspected and an agent assigned to them in 1869. He and other early agents operated out of either Fort Wingate or Fort Defiance, but in 1874 an agency and school were functioning at Keams Canyon, near the Hopi villages. But relationships were by no means to be continuous, for between 1869 and 1882 the agency was discontinued and re-established three times.<sup>12</sup> The Hopi were peaceful, sedentary, self supporting, and comparatively moral. Further, they had little that the white man coveted. Consequently, they received less attention and fewer favors than their more notorious neighbors, the Navajo and the Apache who were, in effect, bribed time and again. The Hopi were allowed to shift for themselves on unlimited lands as long as all was going reasonably well. Eventually, however, certain developments began to indicate the need for a reservation.

Since 1858, the Mormons had visited the Hopi and had proselyted among them. In about 1875 they established a community at Moenkopi, and at approximately the same time several Mormon settlements sprang up along the Little Colorado River.<sup>13</sup> W. B. Truax, agent for the Hopi, in his report for 1876 referred with some uneasiness to settlements of "whites" on the "west and southwest" of the Hopi.<sup>14</sup> He did not identify them further, but the following year agent Irvine stated explicitly that these were Mormons.<sup>15</sup> Both of these agents urged that a reservation be established. It can be presumed that these reports had some influence, as both the mili-

11. A review of Indian affairs in the Southwest from 1848 to 1869 will be found in Dale, 1949, pp. 46-63.

12. Data on Hopi contact with the government, or lack of it, between 1869 and 1882 will be found in the Ann. Rept. Comm. Ind. Aff. for those years.

13. Barnes, 1935. See under items "Moenkopi" p. 281, "Alben City" p. 15, "Joseph City" p. 227, "Brijham City" p. 62, and "Sunset City" p. 430.

14. Ann. Rept. Comm. Ind. Aff. for 1876, p. 6.

15. Ann. Rept. Comm. Ind. Aff. for 1877, p. 166.

tary and the Indian administration had no great love for the Mormons, and were convinced that they were inciting the Indians and even furnishing them arms to be used against United States troops. The threat of Mormon encirclement and infiltration seems to have been a primary reason for setting up a reservation.

"Civilization" and its white carriers were also approaching from the east with the construction of the Atlantic and Pacific (now the Atchison, Topeka, and Santa Fe) Railroad. The railroad crossed into Arizona in late 1881, and passed south of the Hopi villages in 1882.<sup>16</sup> Although the new railroad was some sixty miles south of the Hopi towns, it was bringing an influx of white men, and Hopi isolation was disappearing. Towns such as Holbrook and Winslow were springing up along the railroad.<sup>17</sup> Liquor was flowing freely and land was in demand, and it appears that this accelerated the establishment of the reservation. The timing of the action is at least highly suggestive, coinciding precisely with the passing of the railroad below the Hopi.

A third consideration leading to the reservation seems to have been the pressure of the Navajo on Hopi grazing lands and water supply. The Navajo were increasing in numbers and spilling over onto whatever lands seemed inviting. Agent Truax expressed concern over this in his report of 1876, and presented this as a reason for establishing a reservation for the Hopi.<sup>18</sup> Apparently it was thought that the delimiting of a reservation might assist in controlling this problem.

It should not be presumed that the ordering of a reservation in 1882 automatically solved any of these problems. The lines marked on a map in Washington made little or no immediate difference to the Indians in Arizona. The boundaries existed only on paper and seem not to have been marked on the ground until about ten years later.<sup>19</sup> Their location could hardly have been known to the Indians or to nearby whites, or even to the representatives of the Office of Indian Affairs.<sup>20</sup> Even had the boundaries been known, there was no one to enforce them. The Hopi agency was again discontinued in the fall of 1882, even before the signing of the executive order setting up the reservation. During the next five years the Hopi had little contact with the government and no official to look out for their interests. They were theoretically under the jurisdiction of the Navajo agents at Fort Defiance,

16. Bradley, 1920, pp. 220-224.

17. Barnes, 1935, under items "Holbrook" p. 208, and "Winslow" p. 491.

18. Ann. Rept. Comm. Ind. Aff. for 1876, pp. 5-6.

19. According to the Ann. Rept. Comm. Ind. Aff. for 1890, p. xlvii, the President authorized a survey that year. I can find no record that a survey of the Reservation was actually made earlier than that reported in the Ann. Rept. Comm. Ind. Aff. for 1903, pp. 112 and 997-998.

20. Agent Bickerton of the Navajo reservation in the Ann. Rept. Comm. Ind. Aff. for 1883, p. 121, stated strongly the difficulties of administering an unmarked reservation.

but the agents there had their hands more than full with their immediate charges and had no time for the Hopi. Only since 1887 has there been an agency in continuous operation among the Hopi.<sup>21</sup> It seems doubtful that the Hopi were aware for several years that they had been surrounded by and imaginary wall, and there is certainly no indication that it made any immediate change in their lives or fortunes.

The laying out of the reservation as a rectangle bounded by latitude and longitude was obviously a swivel-chair job by someone with a map and a ruler and little knowledge of the area and problems. To the Hopi and the Navajo, longitude west of Greenwich and latitude north of the equator meant nothing whatsoever. Such boundaries were artificial ones without regard to topography, natural landmarks, land nature and utilization, or ethnic boundaries. The folly of this was expressed very vigorously by General Scott in 1921.<sup>22</sup> The lack of realism in setting up the reservation became manifest in the difficulties of its later operation.

Much of the area reserved for the Hopi was in 1882 already in the hands of the Navajo where it has remained. This was true of the entire northern half of the reservation (north of the 36th parallel) and much of the periphery of the southern half. On the other hand, the Moenkopi area to the west was not included in the reservation. At Moenkopi are large springs and the only perennial stream in the area in use by the Hopi. Here the people of Orabi village maintained an outlying agricultural community where was grown most of the Hopi supply of cotton and wheat, as well as other produce.

When the Hopi reservation was established, it abutted on the Navajo reservation to the east. Subsequently, the Navajo reservation has been enlarged by successive executive orders,<sup>23</sup> until it completely surrounded and enclosed the Hopi reservation. The Moenkopi area was given to the Navajo in an extension of their reservation in 1900, and became officially Navajo land. But the Hopi have held on tenaciously and still occupy a portion of this fertile and well-watered oasis. The Navajo likewise continued to live on the Hopi reservation and moved onto it in ever larger numbers. The Indians thus made their own adjustments to the unrealistic reservation lines, but in doing so the Hopi were at a disadvantage in the face of the more numerous and more aggressive Navajo.

The Office of Indian Affairs and the local Indian agents also adopted a practical viewpoint, leaving the Indians essentially where they had been, and trying only to prevent too

21. These data on Hopi affairs between 1882 and 1887 are based on the Ann. Rept. Comm. Ind. Aff. for those years.

22. Quotation from General Scott in Crane, 1929, pp. 298-299.

23. For the series of orders enlarging the Navajo reservation, see Kappler, 1904, pp. 875-877.

close compression of the Hopi. For many years, the Navajo living on the Hopi reservation were administered by the Hopi agency at Keams Canyon, while the Hopi at Moenkopi were under the Western Navajo agency at Tuba City. Schools for the Navajo were (and are) actually situated on the Hopi reservation. Bringing this patchwork to a comparatively smooth working system was naturally a source of frustration and irritation to officials. The difficulties which were involved are expressed eloquently by Leo Crane, who was agent to the Hopi from 1911 to 1919.<sup>24</sup>

Since about 1937, certain administrative changes have been instituted. A land management district has been set up around the Hopi villages.<sup>25</sup> This area has been fenced and the Hopi are not permitted to graze their stock or to plant their crops outside this district. The remainder of the Hopi reservation has been turned over to the Navajo. In partial return, the occupation of a portion of the Moenkopi region by the Hopi is officially recognized and respected. The land use unit and the Hopi part of Moenkopi are administered by the Hopi agency of Keams Canyon. The remainder of the Hopi reservation is now under the Navajo agency at Window Rock. This new administrative arrangement has the virtue of directness and realism, but gives official sanction to the presentation of about three-fourths of the Hopi reservation to the Navajo.<sup>26</sup> The land use unit and the part of Moenkopi are administered as if they were the Hopi reservation. This area is often referred to as the "Hopi Jurisdiction," but on at least one map issued by the Office of Indian Affairs, the land management unit is actually labelled as the "Hopi Indian Reservation" and the original outlines of the Hopi reservation are not even indicated.<sup>27</sup>

The boundaries of the Hopi reservation as established in 1882, have never been revised by any executive or legislative action. It would thus appear that the Hopi still retain rights over the entire reservation. Actually through Navajo trespass and administrative practice, they are now confined to a fraction of their lands. The original reservation has been ignored in the new administrative organization. The expediency of this, in view of the serious need for additional Navajo land, is readily understandable, but the legality of this situation is perhaps open to question.

The lands reserved for the Hopi, although originally generous in quantity, are mostly of marginal character and in-

24. Crane, 1929, see Chap. 12, pp. 122-141 in particular.

25. U. S. Soil Conservation Service, Land Management Unit no. 6. This is commonly referred to as the "Hopi Unit".

26. The U. S. Soil Con. Ser. Report, 1937, p. 2, gave the area of Unit 6 as 499,248 acres. Thompson and Joseph, 1944, p. 32, list the land in use by the Hopi as 631,194 acres. Whatever the exact figure may be, it is apparent that the Hopi have lost 70 to 80% of their land.

27. U. S. Office of Indian Affairs, map of the "Navajo Country", 1937, revised 1945.

capable of supporting intensive and highly productive agriculture or stock raising.<sup>28</sup> By judicious use of their land and by ingenious techniques of dry-farming, the Hopi have managed to scratch a precarious living from this unpromising area.<sup>29</sup> They have been traditionally a sedentary people, tilling the soil near their villages. In later times, their crops have been supplemented by limited stock grazing. Their operations were chiefly near their villages, so it is not likely that they would have made much use of the more outlying parts of their reservation, even had these been available to them. But as the Navajo appropriated land close to the villages and reduced the grazing range, Hopi economy was affected adversely.<sup>30</sup>

The present confinement of the Hopi certainly precludes any real expansion of their activities to increase productivity. Officials have even required them to reduce their stock to conform to the diminished lands allowed them. Even with the improvements introduced by the government, it is apparent that the lands now controlled by the Hopi will not be adequate to permit more than a bare subsistence economy.<sup>31</sup> This is recognized in the recent bill appropriating \$88,570,000, to be applied over a ten year period "to promote the rehabilitation of the Navajo and Hopi Tribes,"<sup>32</sup> by carrying out the program outlined by the Department of the Interior.<sup>33</sup> If the Hopi, along with the Navajo, are to "attain standards of living comparable with those enjoyed by other citizens" as visualized in the bill, then a review of Hopi land holdings would seem to be in order.

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28. For descriptions of the Hopi country see, Gregory, 1916; Hoover, 1930; U. S. Soil Con. Ser. report, 1937; and Hack, 1942.

29. For data on Hopi agriculture see, Hoover 1930; Forde, 1931; and Hack, 1942. 30. Thompson and Joseph, 1944, discuss the Hopi subsistence base (pp. 16-26) and remark on the decline of Hopi economy (p. 32).

31. The U. S. Soil Con. Ser. report, 1937, p. 30, gave the annual per capita income of the Hopi as \$163.56. The figures from Thompson and Joseph, 1944, for population (p. 31) and for total income (p. 24) suggest a figure less than half the above.

32. Public Law 474, 81st Congress, Chapter 92, 2nd Session, (S. 2734), passed April 19, 1950.

33. Krug, 1948.