Oklahoma.
Forrest L. Strang, Clinton.
Perry R. High, Mayesville.
Elmer D. Rock, Sayre.
Oklahoma.
Cyril C. Shew, Banner.
Henry H. Mednick, Pilot Rock.
Pennsylvania.
Edward A. Christley, Ellwood City.
Simon C. Dosh, Spartan.
Michel K. Freeman, Westmoreland.
Utah.
John A. Call, Buena Vista.

House of Representatives.
Tuesday, January 30, 1923.

The House met at 12 o'clock noon, and was called to order by the Speaker.

The Chaplain, Rev. James Shein Montgomery, D. D., offered the following prayer:

O Lord, we are not alone with Thee. He who considers the lily and notes the sparrows’ fall has but little cause to mourn. "Come, thou blessed of the Lord," happy upon this Holy day the blessings of a free mind and an untrodden heart. Help us to forgive our enemies, to encourage the ignorant, to relieve the distressed, and to share with others the common truths of life. We thank Thee for the freedom of our government and for the blessings that mark our institutions, and in the remembrance of our past lives, through Christ, our Savior. Amen.

The Journal of the proceedings of yesterday was read and approved.

Legislative Appropriation Bill—Conference Report.
Mr. CANNON, Mr. Speaker (H. Rep. 1477) and accompanying statement on the legislative appropriation bill for printing under the rule.

The SPEAKER. The gentleman from Illinois presents the conference report and accompanying statement on the legislative appropriation bill for printing under the rule. The Clerk will read the report as follows:

Conference Report (H. R. 13920) making appropriations for the legislative branch of the government for the fiscal year ending June 30, 1924, and for other purposes.

The SPEAKER. Ordered printed under the rule.

Message from the Senate.
A message from the Senate, by Mr. Crockett, one of its clerks, announced that the Senate had passed bills of the following titles, in which the concurrence of the House of Representatives was requested:

S. 3395. An act to authorize the American Niagara Railroad Corporation to build a bridge across the Niagara River between the State of New York and the Dominion of Canada.

S. 3937. An act to authorize the building of a bridge across the Tug River between South Carolina and Georgia; and S. 3938. An act in recognition of the valor of the officers and men of the Seventy-ninth Division, who were killed in action or died of wounds received in action.

The message also announced that the Senate had agreed to the report of the committee of conference on the disapproving votes of the President upon the amendments to the Senate bill (11 R. 13920) making appropriations for the legislative branch of the government for the fiscal year ending June 30, 1924, and for other purposes.

The message also announced that the Senate had agreed to the amendments of the House of Representatives to the bill (S. 1390) to correct the military record of John Sullivan.

The message also announced that the Senate had agreed to the amendment of the House of Representatives to the amendments of the Senate numbered 11, 31, and 35 to the bill (11 R. 13481) making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1924, and for other purposes, had been rescinded from its amendment numbered 34 to said bill. That the Senate had disagreed to the amendment of the House of Representatives to the amendment of the Senate numbered 33 to said bill, that further insisted upon the said amendment, had voted in favor of the House of Representatives on the disapproving votes of the two Houses thereon, and had appointed Mr. McNary, Mr. Jones of Washington, Mr. Linscott, Mr. Overman, and Mr. Smith to act as the conference on the part of this House.

The message also announced that the Senate had passed the following resolutions:

Senate Resolution 425.
Resolved, That the Senate has passed with profound sorrow of the death of Hon. Philip C. Knox, late a Senator from the State of Pennsylvania.

Resolved, That as a mark of respect to the memory of the deceased, the business of the Senate be now suspended to enable his associates to pay tribute to his high character and to his distinguished service as a public servant.

Resolved, That the Secretary communicate these resolutions to the House of Representatives and transmit a copy thereof to the family of the deceased.

Senate Resolution 423.
Resolved, That as a further mark of respect to the memory of the deceased the Senate do now adjourn.

Senate Resolution 424.
Resolved, That the Senate has passed with profound sorrow of the death of Hon. William H. Hoole, late a Senator from the State of Pennsylvania.

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And that the Vice President, under the second resolution, and Mr. Morse, Mr. Keyes, Mr. Hamill, Mr. McNally, Mr. Hayard, and Mr. Walsh of Massachusetts members of the committee on the part of the Senate.

Colorado River Pact.
Mr. HAYDEN. Mr. Speaker, I ask unanimous consent to extend my remarks in the House by publishing some information that I have gathered relative to the Colorado River compact.

The SPEAKER. The gentleman from Arizona asks unanimous consent to extend his remarks in the House by publishing some information that I have gathered relative to the Colorado River compact.

Mr. STAFFORD. Are they the gentleman's own remarks?
Mr. HAYDEN. They are partly my own remarks, but other.

The extension of remarks referred to be here printed in full as follows:

Mr. HAYDEN. Mr. Speaker, the Colorado River compact is of immediate and intense interest to the people of the seven States of the basin of that mighty river, and the Nation as a whole will soon realize the importance. This is the first time a number of States have sought a unanimous agreement upon a question which vitally affects their common welfare. Very naturally there has been a desire to secure all the information that could possibly be obtained not only as to
the true meaning of the terms of the compact but also as to its effect when approved. In the hope that I might aid in this quest for knowledge, I have asked a number of questions to those of the Federal Government who are best qualified to speak on this subject. First among them is Hon. Herbert Hoover, who served as chairman of the Colorado River Commission, which drafted the compact. His reply is as follows:

DEPARTMENT OF COMMERCER. 
WASHINGTON, January 27, 1928.

HON. CARL HAYDEN, 
Chairman, United States Senate, Washington, D. C.

My Dear Mr. Hayden: Referring to your letter of January 9 addressed to the Secretary, including questions on the Colorado River compact, I am requested by Mr. Hoover to forward to you the answers to the questions which you propounded. Very truly yours,

CLARENCE C. SMITHSON,
Secretary, Colorado River Commission.

Question 1. What was the reason for dividing the drainage area of the Colorado River and its tributaries into two basins, as provided in Article II of the Colorado River compact?

The reasons were:

(a) The drainage area falls into two distinct natural divisions, from a geographical standpoint, and an economic point of view. They are separated by over 370 miles of barren country with little contact between them. The upper basin is a large area comprising the lands of the upper basin that the valley of the lower basin.

(b) The climate of the two basins is different; that of the upper basin being generally more temperate, whereas that of the lower basin ranges from semitropical to tropical. The growing seasons, the crops, and the quantity of water consumed per acre are therefore different.

(c) The economic conditions in the two basins are entirely different. The upper basin is of small development than the lower basin. The upper basin will be slower in development than by storage, whereas the development of the lower basin is more rapid.

Question 2. Was the apportionment in Article III of the compact between the upper and lower basins arbitrary or was it based on the actual requirements of each basin?

The apportionment was not arbitrary. It was based on a careful study of the needs of the two basins. The data available was the estimates provided by the Reclamation Service, which follow the trend of the years and the density of new and old acreage in the two basins, including not only the existing projects considered economically feasible and also those of doubtful feasibility and intended to cover every prospective development during the next 25 years. The commissioners and Mr. Hoover, on the basis of the estimates from the basic estimates of the Reclamation Service, and some compromise from these figures was agreed to by the commission in compensation for different differences. There was particular agreement with respect to the estimated consumption of water per acre. It will be noted that the total acreage in the lower basin, present and prospective, is as high as 5,000,000, whereas that in the upper basin is given as 2,500,000. Therefore the amount of water depends partly on the consumption assumed per acre, and after general consideration an addition was made in each case to cover any possible mistakes of calculation, the general addition being about 50 per cent more than the probable use.

<table>
<thead>
<tr>
<th>Basin</th>
<th>Acreage (1928)</th>
<th>Total Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Basin</td>
<td>8,000,000</td>
<td>8,500,000</td>
</tr>
<tr>
<td>Upper Basin</td>
<td>3,500,000</td>
<td>4,500,000</td>
</tr>
<tr>
<td>Total</td>
<td>11,500,000</td>
<td>13,000,000</td>
</tr>
</tbody>
</table>

Question 3. Why was 90 years fixed as the time for a future apportionment of the surplus water of the Colorado River?

There was a decided conflict between the States over the period to be fixed in this paragraph, based chiefly on the development of both the upper and lower basins. Some desired a shorter period and a longer time. Suggestions were made varying from 25 to 50 years. The 90-year period was finally arrived at as a common position. The States then gave their consent to the Imperial Valley and Salt River Valley for instance—furnish the full development of the Colorado River system. It was found that more water was available for use in the upper basin and that the upper basin could use more water for irrigation purposes. The term was changed from 90 years to 90 years plus the time required to develop the lower basin.

Question 4. Why was the term "Colorado River system," used in Article II of the Compact, a term of 90 years for water for irrigation purposes?

This term is defined in Article II as covering the entire area of both the upper and lower basins of the Colorado River and its tributaries in the United States. It was used as the duty of the commission to divide all the water of the river. It serves to make it clear that this was the only part that was to be divided. The commission intended to do as much as possible to solve the problem of the river's water needs.

Question 5. Was there an agreement made in Article II of the Compact that 75,000,000 acre-feet of water would be provided for the upper and lower basins?

This term is defined in Article II as covering the entire area of both the upper and lower basins of the Colorado River and its tributaries in the United States. No other term could be used, as the duty of the commission was to divide all the water of the river. It serves to make clear that this was the only part that was to be divided. The commission intended to do as much as possible to solve the problem of the river's water needs.

The agreement as to the flow of 75,000,000 acre-feet at Lee Ferry during each 10-year period fixes a definite quantity of water which must pass that point. Under Article II (a) each basin is entitled to the use of 5,000,000 acre-feet annually, and no provision was made in the agreement for the river to supply these quantities, but in the improbable event of a deficiency, the lower basin has the first call on the water up to a total of 75,000,000 acre-feet at each 10-year period. If there were in the commission a firm belief that such a shortage will ever occur, the provision was adopted as a matter of caution. The period of 10 years was fixed as the basis of measurement, as being long enough to allow equalization between years of high and low flow, and as representing a basis fair to both divisions.

Question 6. Are the 1,000,000 additional acre-feet of water apportioned to the upper basin as shown in Article II (b) to be apportioned from the Colorado River or solely from the tributaries of that stream within the State of Arizona?

The use of the word "such" water in this paragraph clearly refers to water from the Colorado River and not the 1,000,000 acre-feet provided for in Article II, which can therefore be taken from the main river or from any of its tributaries.

Question 7. If more than 1,000,000 acre-feet of water are beneficially used and consumed annually on the tributaries of the Colorado River system, would it be possible to reallocate the benefits of an entire year's water?

No, the provision for the 1,000,000 acre-feet of water from the tributaries is a matter of distribution, and no reallocation of benefits would be possible.
Colorado River in Arizona, will the excess above that amount be charged against the 75,000,000 acre-feet of water to be delivered at Lee Ferry during any 10-year period, as provided in paragraph (d) of Article III? In other words, will the use of any additional water (above the amount charged against the Lee Ferry in any way alter the States of the Upper division from their obligation not to cause the flow of the river to be depleted below 75,000,000 acre-feet in any period of 10 consecutive years?

In this connection, I would like to point out that there is no connection between the use of waters in Arizona from Colorado River tributaries and the obligation of the Upper States to deliver the 75,000,000 acre-feet each 10 years at Lee Ferry. Their undertaking in this respect is separate and independent of the facts pertaining to the use of other waters than those from the Colorado River system. But all water delivered from Arizona, whether the waters of tributaries entering the river below Lee Ferry, must be included in that quantity. The relation is reciprocal. Water used from those tributaries falls within the 75,000,000 acre-feet per annum from the entire Colorado River system, the main river itself. All water not provided from the waters of tributaries entering the river below Lee Ferry, but remains available for use over and above that amount.

Paragraph (c) of Article III does not contemplate any treaty. It recognizes the possibility that a treaty may be made at some time, be made and that under it Mexico may become entitled to the use of some water, and then the restriction in such an event, the treaty to the country may become valid. As to the conditions under which Mexico might be made to receive water in a reservoir which may be constructed, is to the advantage of speculation, but it is safe to say that if such a situation should arise, it will be done under conditions fair and satisfactory to all parties concerned.

Question 11. What is the estimated quantity of water which constitutes the undivided surplus of the annual flow of the Colorado River and which is in certain cases used or consumed in either the Upper or the Lower basin until 1993, so that the entire amount above the apportionment must flow into Mexico, where it may be stored and then create a water right in such water which the United States would be bound to recognize at the end of the 40-year period?

(a) The unapportioned surplus is estimated at from 4,000,000 to 6,000,000 acre-feet, but may be taken as approximately 5,000,000 acre-feet.

(b) The right to the use of unapportioned or surplus water is not covered by the compact. The question can not arise until the waters are apportioned and used, and then the conditions may be entirely changed under the ordinary rules of law and the compact itself. If the water is used in the Upper States, the situation could arise where it would be permitted under the ordinary rules of law. It would be impossible for the Upper States to control the water in the entire period of 40 years. If it is desired to do so, for those reasons, I answer the question in the negative.

Question 14. Can the right to any surplus water in the Colorado River Basin be acquired by a States of the Upper division from the entire surplus waters of the Colorado River basin?
Question 15. Does paragraph (d) of Article II in any way modify the obligation of the States, the upper division, or any Mexican river, to permit the surplus and unappropriated waters to flow down in satisfaction of any right to water which may hereafter be accorded by treaty to Mexico? Within a year or a 15-year period, the States of the upper division shall have the entire basin of the upper division for its own use of such water to Mexico.

(b) No, it is provided in the compact that the upper States shall hold their share of any Mexican river to the denial and surplus of water to be delivered in addition to the 75,000,000 acre-feet otherwise provided for.

(b) In the face of the specific language of Article III (c) that the burden of any deficiency must be "equally borne," neither the surplus nor any Mexican river to the denial of the upper basin to Mexico. In this instance, the language is that it must not be imposed on anyone. If the surplus is sufficient, there is no burden on anyone. If it is not sufficient, the surplus is not such that it must be imposed on anyone. If no provision is made for a reduction of the terms relating to the flow of the Colorado River at Lee Ferry, as set forth in paragraph (d) of Article III (c), thesurplus water shall be divided equally between the States of the upper basin and the States of the lower basin.

Question 16. Why is it that provision is made in paragraph 1 (c) of Article IV for a 19-year period, in lieu of the 19-year period, of the Compact of the Northen River system unassisted by paragraphs (e), (f), and (g), but that no provision is made for a reduction of the terms relating to the flow of the Colorado River at Lee Ferry, as set forth in paragraph (d) of Article III (c), thesurplus water shall be divided equally between the States of the upper basin and the States of the lower basin.

(b) This provision is made in Article III (c) because the surplus of water to be delivered in addition to the 75,000,000 acre-feet otherwise provided for. Paragraph 19. Why is the impounding of water for power purposes made subject to the right of the upper States to use such water and for power purposes as provided in paragraph 19 of Article IV?

The purpose of such impounding is to establish law, either by consent or statute, in most of the semi-arid States. This provision would provide for the use of dam water for power purposes, such as irrigation, fishing, or fish culture, and the development of hydraulic power for domestic and agricultural use, combined with the apportionment of 7,500,000 acre-feet of water to the upper basin, as set forth in paragraph (d) of Article III (c).

(b) In the face of the specific language of Article III (c) that the burden of any deficiency must be "equally borne," neither the surplus nor any Mexican river to the denial of the upper basin to Mexico. In this instance, the language is that it must not be imposed on anyone. If the surplus is sufficient, there is no burden on anyone. If it is not sufficient, the surplus is not such that it must be imposed on anyone. If no provision is made for a reduction of the terms relating to the flow of the Colorado River at Lee Ferry, as set forth in paragraph (d) of Article III (c), thesurplus water shall be divided equally between the States of the upper basin and the States of the lower basin.

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of the waters of the Colorado River system apportioned, by the compact to the lower basin, what procedures will be followed and who will determine the basis of such differences as may arise thereunder as provided by Article VI if its provisions are not sufficient or not satisfactory, then the dispute would be settled in the same way as other interstate conflicts are also, either by negotiation, agreement, or by other means and procedure as may be prescribed by the compact. This article is perhaps unnecessary, it is merely declaratory of the compact, which was entered into by the States, and the agreement was intended to be the basis of any understanding entered into by the United States and the Indians. It is presumed that the States have no power to disturb these relations, and it was thought wise to declare that such was intended.

From Question 25, it is somewhat confused with me and I would like to have your interpretation of its meaning. Why is the term “storage capacity” used? Does the capacity of a reservoir to hold water necessarily mean that it will be destroyed? If this “storage capacity” is destroyed by the reservoir filling with silt, are all rights to the use of water in the lower basin likewise destroyed? Why was so small a figure as 4,500,000 acre-feet agreed upon as the measure of this capacity?

The first sentence of this paragraph is a recognition of the validity of present perfected rights to the use of waters and is inserted to obviate any attempt by present users to assert rights and impair the compact.

The second sentence covers the situation now existing on the lower river. It is claimed that the entire low-water flow of the Colorado River in California and Arizona has been lost to these States by the failure of the States of California and Arizona to act in a manner consistent with the Compact. This claim is incorrect. The States have not acted in a manner consistent with the Compact, and the Court has ordered them to act in a manner consistent with the Compact.

The third sentence refers to the construction of a dam by the States on the lower river. The construction of such a dam would impair the Compact and would violate the Compact.

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Answer 2-A. No data are at hand in regard to any proposed diversion from the drainage area of the Colorado River in the States of Arizona, California, or Nevada unless the Imperial Valley diversion be so considered.

Question 2-B. How many acre-feet of water are now being used annually in the Imperial Valley?

Answer 2-B. The following annual diversions of the Imperial Valley Canal is given as follows:

<table>
<thead>
<tr>
<th>Imperial irrigation district</th>
<th>Acre-feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States land</td>
<td>1,257,000</td>
</tr>
<tr>
<td>Main intake water</td>
<td>540,000</td>
</tr>
<tr>
<td>Lower intake water</td>
<td>173,000</td>
</tr>
</tbody>
</table>

Total diversion: 2,970,000

Question 2-C. How much acre-feet of water will be required to irrigate all of the lands that it is feasible to bring under cultivation in the Imperial and Coachella Valleys?

Answer 2-C. No data are at hand in regard to any proposed diversion from the drainage area of the Colorado River in the States of Arizona, California, or Nevada unless the Imperial Valley diversion be so considered.

Question 3. What is the estimated cost of the All-American Canal and other works for the irrigation of these lands?

Answer 3. Senate Document 142, page 86, gives estimated total cost of the All-American Canal and other works as $40,000,000.

Question 4. Where are the present, probable, and the maximum possible number of acre-feet of water that may be used for irrigation from the Colorado River system in each of the four sections of the division?

Answer 4. The following table answers the question, the quantities being in acre-feet:

<table>
<thead>
<tr>
<th>Use of Colorado River, upper basin</th>
<th>Acre-feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper basin</td>
<td></td>
</tr>
<tr>
<td>Oregon</td>
<td>750,000</td>
</tr>
<tr>
<td>Nevada</td>
<td>800,000</td>
</tr>
<tr>
<td>Utah</td>
<td>350,000</td>
</tr>
<tr>
<td>Wyoming</td>
<td>367,000</td>
</tr>
<tr>
<td>Total</td>
<td>1,200,000</td>
</tr>
</tbody>
</table>

Of the above "new acreage" of 1,200,000 acres, it is estimated in Senate Document 142, page 33, that a total of 1,100,000 acres will be irrigated in the upper basin in the near future.

Question 5. If the maximum quantity of water is diverted for irrigation in the upper basin, how much of it will return to the river by seepage and drainage and be available for use at Lee Ferry?

Answer 5. Above figures are based upon an average figure for "consumptive use" that is, diversion minus return flow, and are believed to be large enough to include evaporation from local reservoirs which will be used for irrigation. They therefore represent the net reduction in the flow of the river to be anticipated under the assumed conditions.

Question 6. After deducting the maximum quantity of water that may be diverted out of the upper basin and the maximum amount that may be consumed by irrigation and domestic uses, what is your estimate of the average annual run-off from the upper basin in acre-feet at Lee Ferry?

Answer 6. Mean discharge at Lee Ferry, 1903-1920 (assumed same as in 1890-1902), 16,000,000

Total discharge at Lee Ferry, 1903-1920, 18,000,000

Question 7. If a reservoir of 20,000,000 acre-feet capacity had been in existence at that time, how much water would have been carried, over the previous years to aid in meeting any deficiency?

Answer 7. Senate Document 142, page 30, shows that starting in 1893 with a 20,000,000 acre-foot reservoir half full, the reservoir would have filled in 1900 and again in 1901, and the full demands for irrigating 1,500,000 acres below could have been met not only through 1902 but through the succeeding low years of 1903 and 1904. In addition, sufficient water would have been available for discharge through the months of low irrigation demand to maintain a year around output of 700,000 horsepower.

Question 8. How many acres are now being irrigated; what additional areas can be irrigated from the main Colorado River and what is the estimated cost of the reclamation of the lands in Arizona within the projects that have been investigated by the irrigation service?

Answer 8. Senate Document No. 142, gives the following figures for lands irrigated in Arizona, 1920, from the main stream of the Colorado:

| Main stream: Parker project | 100,000 | 100,000 |
| Total | 200,000 |

Question 9. Do you have the same information as to the projects in California on the Colorado River above the Laguna Dam?

Answer 9. Senate Document No. 142 gives the following figures:

| Irrigated, 1930 | Acre-feet | 100,000 |
| Total | 200,000 |

Question 10. Is it true that, if the Colorado River compact is adopted, all of the water that Arizona will ever get out of the main river will be enough to irrigate only 200,000 acres of land between the 120,000 acres in the Parker project and 110,000 acres in the Parker project?

Answer 10. The Colorado River compact does not attempt to divide the water of the river between the States. Rights already initiated by California and Nevada, there is nothing in the compact that will prevent the State of Arizona from taking from the river all the water that it can put to beneficial use. Rights already initiated will have to be enforced by any court, and future developments under the compact will be undertaken in competition with the two States named; and with the cooperation instead of against possible opposition of the States of the upper basin. The
The present and prospective use of water in the lower basin is estimated as follows:

<table>
<thead>
<tr>
<th>Lower basin</th>
<th>Acropora-irrigation</th>
<th>Consump- tion of water, acre-feet</th>
<th>New average</th>
<th>Consump- tion of water, acre-feet</th>
<th>Total average</th>
<th>Total consumption of water, acre-feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>32,000</td>
<td>200,000</td>
<td>220,000</td>
<td>600,000</td>
<td>240,000</td>
<td>600,000</td>
</tr>
<tr>
<td>California</td>
<td>400,000</td>
<td>2,000,000</td>
<td>2,000,000</td>
<td>6,000,000</td>
<td>2,000,000</td>
<td>6,000,000</td>
</tr>
<tr>
<td>Nevada</td>
<td>4,000</td>
<td>200,000</td>
<td>200,000</td>
<td>600,000</td>
<td>200,000</td>
<td>600,000</td>
</tr>
<tr>
<td>Nevada, total</td>
<td>512,000</td>
<td>2,500,000</td>
<td>2,500,000</td>
<td>7,000,000</td>
<td>2,500,000</td>
<td>7,000,000</td>
</tr>
</tbody>
</table>

From this the surplus available for any future development that may be found feasible may be deduced as follows:

Main annual flow at Lee Ferry after deducting all future uses in the upper basin and other considerations: 11,516,000

Total possible demands: 3,500,000

This would irrigate nearly 2,000,000 acres of land in addition to the acreage figured above, and since water must flow downhill and over the Boulger Canyon of the size proposed would completely drain the stream at that point, it is likely to find the land to which this water can be profitably applied.

**Question 11.** What information have you with respect to the Arizona High Line Canal project?

**Answer 11.** We have noted our field engineers for report on Arizona High Line Canal, which has just been received as follows:

- The Arizona High Line Canal, as outlined more recently, contemplated:
  - A storage reservoir at or near Glen Canyon.
  - A dam or spillway at or near Glen Canyon. Its capacity, as now contemplated, is not stated in definite terms.
  - A second dam at Boulder Canyon to be built to elevation 1,350 feet, or 1,275 feet, or a dam at the end of Glen Canyon of a less height that will raise the water to the same elevation.
  - A tunnel from the Detrital Sacramento Wash through the Black Mountains to the mouth of Glen Canyon, thence along the eastern edge of the Black Mountains to the high level of Glen Canyon, or to the elevation of El Dorado Ferry, water to be delivered at the mouth of the tunnel at an elevation not less than 1,325 feet.
- A large canal, extending southward and generally parallel with the Colorado River, following along the west side of the Black Range, the greater portion of which would be in tunnel from point of the Detrital Sacramento Wash to Mount Davis. These tunnels may aggregate another 50 or 60 miles or more, thence an open canal crossing a desert for a distance of 60 or 70 or 80 miles, washing through the Blue Ridge and Black Mountains, crossing Sacramento Wash and the main line of the Santa Fe Railroad a few miles from Franklin; thence south and southwesterly toward the Colorado River, thence along the entire course of the Chemehuevi Mountains and the Williams Mountains; thence easterly along the north side of the Williams River to a crossing on the Williams River. Through this region there would be more or less tunnel work.

**Question 12.** It was said that the Arizona High Line Canal project is just as feasible as the Colorado River irrigation project recently approved by Congress. What is your opinion?

**Answer 12.** As for this, it is as impossible to predict the future as it is to predict the weather. If the general engineering commission is at present trying to ascertain the elevation of the certain controlling points, it is impossible to give some indication as to the practicality or inexpediency of conducting any further investigations as to the merits or demerits of such a scheme.

**Question 13.** In your report on the Colorado River Basin project, General Giffords discusses a pumping plant which contemplated building a dam 250 feet high across the Colorado at the mouth of the Grand Cañon and using the energy thus stored to operate 17 pumps, each with a capacity of 2,000 acre-feet; which will raise the water 350 feet to an artificial lake, thence the water flows back to the basin, etc. Are the same estimates are available from which any statement of the construction quantities or costs involved in the main features of the Arizona High Line Canal can be very approximately.

**Answer 13.** As far as this is concerned, it is impossible to give any indication as to the practicability or inexpediency of conducting any further investigations as to the merits or demerits of such a scheme.

**Question 14.** While I fully realize that the Colorado River compact will make no reference to the location of storage reservoirs on that stream, yet the subject is one of great interest to the people of Arizona. I am therefore, I hope, in a position to give you a brief comparison of the various plan of the several reservoirs that have been submitted to the legislature, with the help of my trustful assistant, by Mr. Cookies and Mr. Jones, of the Department of the Interior, a summary of the available information relative to the several reservoirs and dam sites along the Colorado River, and the Bighorn and Camp Verde dam sites along the Verde River.

**Answer 14 and 15.** The following tables give the data available in this office relative to these dam sites.
### Table: Storage Capacity and Characteristics of Reservoirs

<table>
<thead>
<tr>
<th>Name</th>
<th>Storage Capacity (acre-feet)</th>
<th>Estimated Cost</th>
<th>Height of Dam (feet)</th>
<th>Width at Base (feet)</th>
<th>Depth to Bedrock (feet)</th>
<th>Character of Rock in Walls</th>
<th>Horsepower Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Carlos</td>
<td>1,000,000</td>
<td>$27,727,703</td>
<td>248</td>
<td>222</td>
<td>20</td>
<td>Gravel</td>
<td>0</td>
</tr>
<tr>
<td>Horse Shoe</td>
<td>223,000</td>
<td>$1,999,400</td>
<td>216</td>
<td>209</td>
<td>19</td>
<td>Sandstone</td>
<td>25</td>
</tr>
<tr>
<td>Camp Verde</td>
<td>421,000</td>
<td>$1,701,400</td>
<td>214</td>
<td>206</td>
<td>18</td>
<td>Basalt</td>
<td>30</td>
</tr>
<tr>
<td>Sedona</td>
<td>3,000</td>
<td>$1,000,000</td>
<td>210</td>
<td>200</td>
<td>17</td>
<td>Basalt</td>
<td>30</td>
</tr>
<tr>
<td>Hualapai</td>
<td>2,000,000</td>
<td>$3,000,000</td>
<td>205</td>
<td>205</td>
<td>17</td>
<td>Basalt</td>
<td>30</td>
</tr>
<tr>
<td>Boulder Canyon</td>
<td>3,000,000</td>
<td>$6,000,000</td>
<td>200</td>
<td>200</td>
<td>17</td>
<td>Basalt</td>
<td>30</td>
</tr>
<tr>
<td>Black Canyon</td>
<td>1,500,000</td>
<td>$1,500,000</td>
<td>195</td>
<td>195</td>
<td>17</td>
<td>Basalt</td>
<td>30</td>
</tr>
<tr>
<td>Diamond Creek</td>
<td>1,000,000</td>
<td>$1,000,000</td>
<td>190</td>
<td>190</td>
<td>17</td>
<td>Basalt</td>
<td>30</td>
</tr>
<tr>
<td>Present</td>
<td>1,000,000</td>
<td>$1,000,000</td>
<td>185</td>
<td>185</td>
<td>17</td>
<td>Basalt</td>
<td>30</td>
</tr>
<tr>
<td>Glen Canyon</td>
<td>1,000,000</td>
<td>$1,000,000</td>
<td>180</td>
<td>180</td>
<td>17</td>
<td>Basalt</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>12,600,000</td>
<td>$12,600,000</td>
<td>180</td>
<td>180</td>
<td>17</td>
<td>Basalt</td>
<td>30</td>
</tr>
</tbody>
</table>

**Note:** Average annual net evaporation was measured at Roosevelt is 60 inches, and this figure has been the basis of evaporative estimates for most of the reservoir studies in this region.

**Question 16.** It has been said that the Colorado River discharges are not nearly sufficient to make the Yuma project a success. What are the principal reasons for this belief, and how can these be overcome?

**Answer 16.** The Colorado River discharges are not nearly sufficient to make the Yuma project a success. The principal reasons for this belief are:

1. **Insufficient Flow:** The river flow is not always sufficient to fill the reservoirs.
2. **Low Water Levels:** The river levels are too low, even during the summer months.
3. **Evaporative Losses:** Evaporation rates are high, reducing the water available for irrigation.
4. **Flow Variability:** The flow of the river is highly variable, making it difficult to plan for consistent water supply.

To overcome these challenges, the project can be enhanced through the following measures:

1. **Reservoirs:** Constructing larger reservoirs can help store more water for use during low-flow periods.
2. **Aqueducts:** Building aqueducts can divert water from areas with excess flow to regions in need of water.
3. **Water Use Management:** Efficient water use and conservation practices can maximize the available water.
4. **Hydroelectric Power:** Utilizing the river's power for energy generation can reduce the need for water-based power.

**Question 17.** How can the depth to bedrock be determined in the Glen Canyon Dam site, and what are the implications for construction?

**Answer 17.** The depth to bedrock in the Glen Canyon Dam site is determined through detailed geological surveys and testing. The implications for construction are significant:

1. **Foundation Stability:** Ensuring that the foundation is stable and can support the dam's weight.
2. **Structural Integrity:** Ensuring that the structural integrity of the dam is not compromised.
3. **Costs:** Higher costs due to the need for more substantial construction efforts.
4. **Scheduling:** Delays in construction due to the need for deeper excavation and more complex construction methods.

**Question 18.** What is the current status of the Glen Canyon Dam project, and what are the next steps for its completion?

**Answer 18.** The Glen Canyon Dam project is currently in the final stages of construction. The next steps include:

1. **Final Testing:** Conducting final tests to ensure all components are functioning correctly.
2. **Water Filling:** Filling the reservoir with water to test the dam's integrity.
3. **Operational Tests:** Conducting operational tests to ensure the dam can be operated safely.
4. **Completion:** Official completion of the project, which is expected in the near future.
uses as may develop in the future. The greatest merit of the compact from the standpoint of Arizona is that it comes from States free from antagonism to one another, and it is a well-conceived and well-laid out agreement. This would be in keeping with the wishes of those who may bring about the development of the river and are opposed to the compact. Arizona would thereby be placed in a position of advantage and interest. It is a question of development, and her interests would suffer accordingly.

Mr. Otteman Hamel, for a number of years chief counsel of the Colorado River Commission, and Mr. Hayden's legal advisor during the sessions of the Colorado River Commission last November at Santa Fe. I therefore considered him to be the best equipped to give a legal interpretation of the compact, but he has now gone off the compact. He says what is not founded on sound reasoning.

DEPARTMENT OF THE INTERIOR.
UNITED STATES RECLAMATION SERVICE.
Hon. Carl Hayden,
House of Representatives.

Dear Hayden: I have received the nine questions previously sent to you concerning the Colorado River compact, and take pleasure in answering them in the order given:

Question 1: It has been said that the Colorado River compact, is based upon the fundamental theory that the seven States owning the waters of the river, each is entitled to an absolute appropriation of a certain amount of water, and all rights arising out of or pertaining thereto, and consequently these States have power to divide its waters among themselves, but that as a matter of fact and law, this compact cannot be enforced, because the United States did not by the compact. The Congress of the United States did not by law, issue a compact for the purpose of distributing and appropriating the waters of the river. This is the argument.

What is your answer to this contention?

Answer 1: When the terms of the Colorado River compact shall have been properly and fully approved by a State, they will be in the part of the law of the State relating to the use of water, and in so far as they conflict with prior law they will operate as a repeal. Rights vested before such approval of the compact, the United States is not bound by the compact. Rights vested after such approval would be subject to those terms, as is true generally of other State legislation. Every arid State has adopted rules which the citizens have a right to the use of water, and which cannot be controlled by the Congress of the United States, and such waters of the compact is merely an additional rule.

Question 2: It has been suggested that no such compact between the seven States is necessary as an antecedent to the construction of the Federal dam at the headwaters of the Colorado River, because Congress, acting for the United States as the owner of the dam and reservoir sites, could provide at the time when funds are made available that the building of such dam for power and irrigation purposes should be considered as giving any rights to the use of the water of the Colorado River which might be necessary to subsequent appropriators in the upper basin. Has Congress now the power to thus limit or modify the right to the use of water from such reservoirs?

Answer 2: There is a diversity of opinion on this point. In the Wyoming case the United States took the position that the National Government is the owner of the use of the unappropriated water of the arid West, and that the States have never acquired any rights therein. However, the court in making its decision did not pass on this claim and the question remains an open one. Congress by any act of Congress in Article 3 of the Colorado River compact. Congress would have the right by legislation to place the limitations you mention on the water rights acquired in connection with Government dam and reservoir sites.

However, it is contended that under existing law the State of Arizona, for instance, has a right as a sovereign to the use of the waters of the Colorado River under the doctrine of prior appropriation. Without reference to State lines, and that appropriations by the Federal Government in that State must follow State law, it would seem that an act of Congress could not substitute for Government reservoirs in Arizona a new rule of appropriation not in accordance with law.

Question 3: The regulation of the use of the Colorado River by the construction of large reservoirs would undeniably result in making available an increased supply of water at all seasons of the year, and that the river would be properly utilized for the irrigation of large tracts of land in Mexico. Would the prior appropriation of this water to a beneficial use in Mexico create any right which the American Government would not have under the terms of the compact, and will all the appurtenances of irrigation projects within the United States thereby become deeded to the Mexican Government? Answer 3: It would not. The rule of prior appropriation is not a rule that the United States would be entitled to all the appurtenances of irrigation projects, but would be entitled to all the waters of the river in the river below the point where it ceases to be entirely within the United States.

The fact that there is not enough water in the Rio Grande for the use of the inhabitants of both countries for irrigation purposes does not protect the Mexican people from the right to use the water of the United States or from the right to have the United States to the burden of restoring or developing the river to the most advantageous use, and the rights created by the compact will be held by the United States within its own territory. The recognition of such a right is entirely consistent with the sovereignty of the United States over its national domain.

Question 4: Would a compact made by Congress or by the legislature of any one of the seven States, with the time of the approval of the Colorado River compact by a Congress of the United States, in a compact of another State, or with another State, be held to be contrary to the laws of the seven States or to the Constitution of the United States?

Answer 4: Such a declaration by a State would be of no force, as the sovereignty of one State gives it the right to control such a question on its own territory.

Question 5: The proposition you describe seems to be based on the common-law doctrine of prior rights, which, however, does not exist in the Colorado River Basin. Such a demand on the part of Arizona would not be well maintained, and other States could make the claim with equal force, to the detriment of Arizona. It would be contrary to the rule of prior appropriation which is the foundation of the present water law of Arizona and of the other States in the arid West. Also, it would be contrary to the decision of the United States Supreme Court in the Wyoming case.

Question 6: What is the legal meaning of the terms "any period of 10 consecutive years" and "the doctrine of Article III of the Colorado River compact"? What means could any State of the United States, in the lower division, use to compel the delivery of 7,500,000 acre-feet of water during a period of such a period? Was it necessary to wait until the end of some other period before invoking the remedy?

Answer 6: The time referred to as "any period of 10 consecutive years" as used in the Colorado River compact, means the period from October 1, 1923, to October 1, 1934, and no longer. Paragraph (d) of article 3 of the Colorado River compact was construed to mean that the United States could, if necessary, bring suit at any time, and that suit could be brought at any time, and that suit could not be brought until it appeared as a fact
that the compact was being violated. This paragraph could be illuminated by the fact that in violation of the plan of the compact, and should always be read in connection with paragraphs (a) and (b) of the same article.

Question 7: If the court held that the upper division would withhold water if Article III of the Colorado River compact, what means would any State of the lower division have to compel the actual delivery of all water, which are not being reasonably applied to domestic and agricultural use?

Answer 7: The same means now have to enforce its existing water laws, supplemented, however, with the advantage of having its legal claims upheld in the court of last resort. The plan of the compact is to reduce causes of controversy to a minimum, first, by agreeing upon the respective legal rights, and, second, by developing between the States, under the provisions of Articles V and VI, a spirit of cooperation and better understanding.

Question 8: In the case of Houghton & Johnson (93 Fed. 556), the court held that, "the owner of these (public) lands (the United States) has power to sell or dispose of any estate therein or any part thereof. The natural navigable streams flowing over the public domain are a part thereof, and the National Government can sell or grant the same or the use of the water, subject to such conditions and restrictions as may to seem proper." Congress, in passing the Desert Land Act approved March 3, 1877 (19 Stat. 377), which provides that the "sources of water supply upon the public lands under navigable shall remain a subject of common use wherever the appropriation of a State shall be attached, and so far as the water may be appropriated and use of the public for irrigation, mining, and manufacturing purposes." If Article IV of the compact is construed as a declaration that the Colorado River is a navigable stream for all purposes, it becomes necessary that the use of the compact by Congress would be to transfer the title to the unappropriated waters of the Colorado River from the United States to the several States named therein, and also as a repeal of the general laws relative to navigation which have been heretofore in force.

Answer 8: Secretary of the Interior Albert B. Fall, who is generally recognized as an authority on relations between this country and Mexico, on January 12, 1922, upon request, made a report on the proposed revision of the compact to the House Committee on Irrigation of Arid Lands. That report stated:

"The said paragraph (a), Article IV, of the compact would, in my opinion, be construed as a violation of the rights of Mexico and, if so construed, might be the basis of a claim against the United States. I am of the opinion that said paragraph should not be approved by the Congress of the United States."

However, should Congress consent to the paragraph in question, such consent would not, in my opinion, operate as a transfer to the States of any right the Government now has in the waters of the Colorado or any of repletion of any part of the desert land. Nor would it be my opinion that Congress should either modify or establish the same right in the United States. The compact is thoroughly workable without settling therein the point.

Question 9: What is your interpretation of the meaning of Article VIII of the compact? Does the use of the term "such rights" imply that "present perfected rights" to the use of water in the lower basin would have to be satisfied from stored water after a storage capacity of 5,000,000 acre-feet has been provided? Whenever a reservoir of that size is available, all future appropriations of water in the lower basin must be determined and not upon the natural flow of the river upon storage. I would add that such appropriations would be based primarily on storage but on the allocation of 8,500,000 acre-feet of water per annum under paragraphs (a) and (b) of Article VIII.

It has been well said that water is the essence of the compact. The United States Geological Survey has been engaged for many years in the work of measuring the flow of streams and has the only reliable information on that subject. The following letter fully demonstrates that the water supply, if properly conserved, is ample for all purposes.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, January 11, 1921.

Don CARL HAYDEN,
Chairman of the House Committee on Irrigation of Arid Lands,
Washington, D.C.

Dear Mr. Hayden: In reply to your letter of January 7, 11, and with reference to frequent personal interviews on the subject, I am sending you herewith answers to the questions propounded relative to the Colorado River.

Very truly yours,

OTTAMA HAMBLE,
Chief Counsel.

PHILIP S. SMITH,
Acting Director.

Question 1. According to your records, what is the maximum, minimum, and average annual flow in acre-feet of the Colorado River between Yuma and Lees Ferry? I would also like to have the same information for all of the tributaries of the Colorado River in Arizona where you have a record of stream measurement.

Answer 1. The summary of the principal records available for gauging stations on Colorado River and tributaries in the State of Arizona is shown by the attached blue print sheets. The data given for each station are: The years or partial years over which the average was made, and the highest and lowest values, the average occurrence for each year, the average discharge for each complete year, and the total run-off for each year or partial year. The year used is the climatic or water year, beginning October 1 and ending September 30, unless otherwise stated.

The longest continuous record is that for Colorado River at Yuma, which begins with January, 1902. This record is collected by the United States-Conservation Service and furnished to the Geological Survey for publication. The point of measurement is below the mouth of the Gila, so the contribution of that stream is included in the record. The amounts diverted at Laguna Dam are not included in the record. The maximum year was 1909-10—run-off, 25,100,000 acre-feet. The maximum year was 1902-3—run-off, 5,870,000 acre-feet. The average annual run-off for 20 years is 17,450,000 acre-feet. It is of interest to note that the year 1902-3 was about 3 per cent greater than the average. The records of flow of the Colorado River above Yuma are for one complete year at Lees Ferry, two complete years at Harddyville, and five complete years at Topock. The run-off at Lees Ferry for that year, 1902-3 was 13,000 acre-feet, the maximum year was 1902-3—run-off, 17,800,000 acre-feet. The records at Yuma show that the flow in these years was 30 per cent greater than the 20-year average. The average of the two years' records at Harddyville (1900-6, 1907) was 20,150,000 acre-feet. The records at Yuma show that the flow in these years was 30 per cent greater than the 20-year average. The run-off at Yuma for the year 1902-3 was 17,800,000 acre-feet. The records at Yuma show that the flow in the five years was 6 per cent less than the 20-year average. The run-off for 1921-22 at Topock was 6 per cent greater than the average. The flow of water at Yuma during the year 1921-22 was approximately an average year of run-off. The inflow between Lees Ferry and Topock for that year, as shown by the records, was 2,080,000 acre-feet. There was an increase in run-off between Topock and Yuma, in addition to the total amount of
all inflow between the two points. This loss is partially accounted for by diversions for irrigation at Laguna Dam and other purposes.

The available records for Little Colorado and Williams Rivers are too short to permit of reliable deductions as to the mean annual flow. For the period of record, August 31, 1922, to September 30, 1922, the entire flow of Little Colorado has been estimated at 230,000 acre-feet for the Little Colorado and 75,000 acre-feet for Williams River.

Records have been obtained at several points on Gila River for periods of different lengths. These records for some of the principal streams, such as Salt, San Carlos, and Kelvin, have been compiled in the attached tabulation. Below the junction of the Salt there are records for about one year near Sentinel and for three complete years in the vicinity of Sentinel. Records for 2 years are available for Salt and Verde Rivers, and for periods of various lengths for San Francisco River, at Clifton; San Pedro River near Fairbank; Santa Cruz River, at Tucson; and Gila River near Smelser, and Gila River at Farmington, along Colorado River.

Inspection of the longer records for Colorado River at Yuma and these for Salt and Verde Rivers shows that during the past 20 years there were two periods or groups of years of high runoff. The first group consists of the years 1895 to 1900, and the second group the years 1915 to 1917. It is evident, therefore, that figures representing average annual, runoff at points between Yuma and Phoenix are really for a period of only a few years in length, may be subject to considerable error.

Question 2. What percentage of the total flow of the Colorado River originates above Lee's Ferry, and how much below that point?

Answer 2. Measurements of the flow of Colorado River at Lee's Ferry have been made since July, 1921. The total runoff at that station for the year ending September 30, 1922, was 151,000,000 acre-feet. For the same period the flow at Yuma was 217,000,000 acre-feet, and at Topock, 100,000,000 acre-feet. Therefore, for that year 93.5 per cent of the total flow as measured at Yuma and 84.2 per cent of that measured at Topock came from above Lee's Ferry.

The mean annual flow at Yuma for the 20-year period 1903-1922 is 17,400,000 acre-feet. Therefore, the water year ending September 30, 1922, was 200,000 acre-feet, or a little more than 1 per cent of the mean flow.

From the above it appears that between 85 and 90 per cent of the total flow of the Colorado River originates above Lee's Ferry. Before the Lee's Ferry records were available a study was made by the Colorado River Commission of records collected at gauging stations above Lee's Ferry, and the conclusion reached at that time—March, 1922—that about 91 per cent of the runoff at Yuma came from the States of Wyoming, Colorado, and Utah.

Question 3. What part of the total flow of the Colorado comes from Gila River?

Answer 3. Records showing the flow of Gila River near the mouth are fragmentary. The Reclamation Service, however, has made an estimate of the total flow for the years 1903 to 1922, based on the available records and measurements of the Gila at or near Yuma. These estimates indicate an annual runoff of 5,000,000 acre-feet, varying from 1900,000 to 4,500,000 acre-feet, with an average of about 1,100,000 acre-feet, which is about 6 per cent of the annual mean flow of the Colorado at Yuma.

Question 4. Where does the water of the Gila River flow to the Colorado River at Yuma and the flow in second-feet at the peak?

Answer 4. The maximum daily flow for each year during the period of record is shown on the attached sheets. The maximum recorded flow at Yuma was on January 22, 1916, when the mean flow for the day was 240,000 second-feet. It should be noted that this flood originated primarily from the Gila, as, during the same month, the Colorado River is at low stage. The highest flood occurred June 8, 1920, when the mean daily flow was 190,000 second-feet. This flood came from that part of the drainage area above the Gila. In general, winter floods at Yuma come from the Gila and summer floods from the Colorado River above the Gila.

Question 5. What are some of the low-water dates of the Colorado River at Yuma and the minimum flow in second-feet?

Answer 5. The low-water flow of the Colorado River at Yuma has been measured at 2,500 second-feet. This is the minimum flow that has been recorded in the past 20 years, and it occurs in January and February.

Question 6. How many acre-feet of water were poured into the Salton Sea by each of these floods?

Answer 6. The Reclamation Service has obtained the following information on the Imperial Irrigation District:

Question 7. What are the dates of some of the highest floods of the Colorado River at Yuma and the flow in second-feet at the peak?

Answer 7. The Reclamation Service has recorded the following floods of the Colorado River at Yuma and the flow in second-feet at the peak:

<table>
<thead>
<tr>
<th>Date</th>
<th>Discharge of Gila at month</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 1921</td>
<td>10,000</td>
</tr>
<tr>
<td>March 1922</td>
<td>15,000</td>
</tr>
<tr>
<td>April 1922</td>
<td>20,000</td>
</tr>
<tr>
<td>May 1922</td>
<td>25,000</td>
</tr>
<tr>
<td>June 1922</td>
<td>30,000</td>
</tr>
<tr>
<td>July 1922</td>
<td>35,000</td>
</tr>
<tr>
<td>August 1922</td>
<td>40,000</td>
</tr>
<tr>
<td>September 1922</td>
<td>45,000</td>
</tr>
<tr>
<td>October 1922</td>
<td>50,000</td>
</tr>
<tr>
<td>November 1922</td>
<td>55,000</td>
</tr>
<tr>
<td>December 1922</td>
<td>60,000</td>
</tr>
</tbody>
</table>

Question 8. How long is the water flowing from the Gila into the Colorado River?

Answer 8. The Reclamation Service has recorded the Gila as having been dry at its mouth during entire months, as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>1921</td>
</tr>
<tr>
<td>July</td>
<td>1921</td>
</tr>
<tr>
<td>August</td>
<td>1921</td>
</tr>
<tr>
<td>October</td>
<td>1921</td>
</tr>
<tr>
<td>November</td>
<td>1921</td>
</tr>
</tbody>
</table>

Question 9. Have both the Gila and Colorado Rivers been in high flood at the same time?

Answer 9. The records show no periods when both the Colorado and Gila Rivers were in high flood at the same time. During three Gila floods there were considerable flows in the Colorado above the Gila, as follows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Yuma Peak</th>
<th>Colorado Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 29, 1921</td>
<td>117,000</td>
<td>90,000</td>
</tr>
<tr>
<td>April 17, 1921</td>
<td>120,000</td>
<td>95,000</td>
</tr>
</tbody>
</table>

Question 10. How many acre-feet of water were poured into the Salton Sea by each of these floods?


Question 11. How many acre-feet of water were poured into the Imperial Valley by the floods of each of these streams?

Answer 11. There is no exact record of the total flow of water to the Salton Sea during these breaks, but it is approximately the same as the total flow at Yuma for the same periods. The recorded run-off at Yuma for the floods of 1915 was 22,000,000 acre-feet, and during the second period about 2,500,000 acre-feet.

Question 12. How many acre-feet of silt are deposited in the Colorado River from each of these floods?

Answer 12. The All-American Canal Board, in report published in 1926 (pp. 24-30), estimates the average quantity of silt carried in suspension annually at Yuma at 90,000 acre-feet and the load at 12,000 acre-feet, making a total load of silt of 102,000 acre-feet.
Engineers of the Reclamation Service estimate the average annual quantity of silt carried at Yuma at 113,000 acre-feet (S. Doc. No. 142, 67th Cong., 2d sess., p. 33).

**Question 13.** What is the estimated number of acre-feet of silt carried by the Colorado River annually at Boulder Canyon and at Lee Ferry?

Answer 13. The Reclamation Service has estimated (S. Doc. No. 142, 67th Cong., 2d sess.) that the amount of silt carried by Colorado River at Boulder Canyon averages about 80,000 acre-feet annually.

**Question 14.** Do geologists generally agree that the Gulf of California once extended over the Imperial Valley and the Salton Sink?

Answer 14. Geologists generally agree that the Gulf of California once extended over the Imperial Valley and Salton Sink.

**Question 15.** Are there any records available for the flows of the Colorado River from a geological viewpoint for the period of 1917 to 1921?

Answer 15. The Government survey of the Colorado River from a geological viewpoint for the period of 1917 to 1921 is available.

**Summary of stream-flow records for gauging stations in Arizona.**

<table>
<thead>
<tr>
<th>Gauging station</th>
<th>Number of complete years of records</th>
<th>Annual run-off in acre-feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado River at Lee Ferry</td>
<td>1</td>
<td>21,500,000</td>
</tr>
<tr>
<td>Colorado River at Hardinge</td>
<td>1</td>
<td>23,000,000</td>
</tr>
<tr>
<td>Colorado River at Lake Havasu</td>
<td>1</td>
<td>25,000,000</td>
</tr>
<tr>
<td>Colorado River at Yuma</td>
<td>1</td>
<td>27,000,000</td>
</tr>
<tr>
<td>Little Colorado River at Woodruff</td>
<td>1</td>
<td>11,000,000</td>
</tr>
<tr>
<td>Little Colorado River at Holbrook</td>
<td>1</td>
<td>9,000,000</td>
</tr>
<tr>
<td>Clear Creek near Window Rock</td>
<td>1</td>
<td>8,000,000</td>
</tr>
<tr>
<td>Williams River near Swansea</td>
<td>1</td>
<td>11,000,000</td>
</tr>
<tr>
<td>Gila River at Guadalupe</td>
<td>1</td>
<td>7,000,000</td>
</tr>
</tbody>
</table>

**Annual discharge of Colorado River at Lee Ferry, Hardinge, and Topock for years ending September 30.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Maximum day</th>
<th>Minimum day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1921</td>
<td>60,000</td>
<td>7,000</td>
</tr>
<tr>
<td>1921-22</td>
<td>110,000</td>
<td>2,000</td>
</tr>
<tr>
<td>1922-23</td>
<td>110,000</td>
<td>2,000</td>
</tr>
<tr>
<td>1923-24</td>
<td>110,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

**Annual discharge for the years ending September 30, 1924 to 1928.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Maximum day</th>
<th>Minimum day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924</td>
<td>140,000</td>
<td>2,000</td>
</tr>
<tr>
<td>1925</td>
<td>140,000</td>
<td>2,000</td>
</tr>
<tr>
<td>1926</td>
<td>140,000</td>
<td>2,000</td>
</tr>
<tr>
<td>1927</td>
<td>140,000</td>
<td>2,000</td>
</tr>
<tr>
<td>1928</td>
<td>140,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

**Flood from Gila River.**
<table>
<thead>
<tr>
<th>Year</th>
<th>Maximum day</th>
<th>Minimum day</th>
<th>Annual discharge (cubic feet)</th>
<th>Annual runoff (acre-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sound?</td>
<td>Date</td>
<td>Sound?</td>
<td>Date</td>
</tr>
<tr>
<td>Williams River at planet near Swanton:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1913-14</td>
<td>8,100</td>
<td>Jan. 25</td>
<td>14</td>
<td>April to September</td>
</tr>
<tr>
<td>1914-15</td>
<td>6,300</td>
<td>Apr. 22</td>
<td>20</td>
<td>July to August</td>
</tr>
<tr>
<td>1915-16</td>
<td>6,000</td>
<td>Apr. 15</td>
<td>26</td>
<td>July 16</td>
</tr>
<tr>
<td>1916-17</td>
<td>6,500</td>
<td>Mar. 1</td>
<td>33</td>
<td>June 30</td>
</tr>
<tr>
<td>San Francisco River at Clifton:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1913-14</td>
<td>1,200</td>
<td>July 4</td>
<td>21</td>
<td>June 26</td>
</tr>
<tr>
<td>1914-15</td>
<td>2,000</td>
<td>Mar. 28</td>
<td>33</td>
<td>June 28</td>
</tr>
<tr>
<td>1915-16</td>
<td>2,000</td>
<td>Dec. 16</td>
<td>12</td>
<td>July 25</td>
</tr>
<tr>
<td>1916-17</td>
<td>1,500</td>
<td>Feb. 20</td>
<td>21</td>
<td>July 27</td>
</tr>
<tr>
<td>Gila River near San Carlos:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1913-14</td>
<td>3,200</td>
<td>Dec. 9</td>
<td>6</td>
<td>July 9</td>
</tr>
<tr>
<td>1914-15</td>
<td>2,500</td>
<td>Dec. 9</td>
<td>16</td>
<td>July 9</td>
</tr>
<tr>
<td>1915-16</td>
<td>1,000</td>
<td>Feb. 5</td>
<td>18</td>
<td>July 6</td>
</tr>
<tr>
<td>Gila River near Tonto:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1913-14</td>
<td>1,200</td>
<td>July 1</td>
<td>1</td>
<td>July 1</td>
</tr>
<tr>
<td>1914-15</td>
<td>1,200</td>
<td>Aug. 7</td>
<td>4</td>
<td>July 1</td>
</tr>
<tr>
<td>1915-16</td>
<td>1,200</td>
<td>Oct. 15</td>
<td>2</td>
<td>July 1</td>
</tr>
<tr>
<td>1916-17</td>
<td>1,200</td>
<td>Oct. 15</td>
<td>4</td>
<td>July 1</td>
</tr>
<tr>
<td>Santa Cruz River at Picacho:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1913-14</td>
<td>9,000</td>
<td>Jan. 24</td>
<td>17</td>
<td>July 25</td>
</tr>
<tr>
<td>1914-15</td>
<td>8,000</td>
<td>Aug. 21</td>
<td>17</td>
<td>July 25</td>
</tr>
<tr>
<td>1915-16</td>
<td>8,000</td>
<td>Dec. 15</td>
<td>16</td>
<td>July 25</td>
</tr>
<tr>
<td>1916-17</td>
<td>6,000</td>
<td>Feb. 10</td>
<td>16</td>
<td>July 25</td>
</tr>
<tr>
<td>Salt River at Roosevelt:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1913-14</td>
<td>2,000</td>
<td>Aug. 10</td>
<td>17</td>
<td>July 15</td>
</tr>
<tr>
<td>1914-15</td>
<td>2,000</td>
<td>Nov. 4</td>
<td>17</td>
<td>July 15</td>
</tr>
<tr>
<td>1915-16</td>
<td>1,500</td>
<td>Nov. 4</td>
<td>17</td>
<td>July 15</td>
</tr>
<tr>
<td>1916-17</td>
<td>1,500</td>
<td>Nov. 4</td>
<td>17</td>
<td>July 15</td>
</tr>
<tr>
<td>Average of 14 years:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Falls River at Mazatzal:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1913-14</td>
<td>2,000</td>
<td>May 16</td>
<td>17</td>
<td>July 15</td>
</tr>
<tr>
<td>1914-15</td>
<td>2,000</td>
<td>Aug. 10</td>
<td>17</td>
<td>July 15</td>
</tr>
<tr>
<td>1915-16</td>
<td>1,500</td>
<td>Nov. 4</td>
<td>17</td>
<td>July 15</td>
</tr>
<tr>
<td>1916-17</td>
<td>1,500</td>
<td>Nov. 4</td>
<td>17</td>
<td>July 15</td>
</tr>
<tr>
<td>Average of 14 years:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Highwater periods in March and July not included.
2. Discharge estimated for several months. Maximum daily discharge not determined for floods of December, 1914, and January, 1915.
3. Record during floods of December and January.
4. Beginning October, 1913, records are sum of records for Salt River above reservoir and Tonto Creek.
### Data from the Federal Power Commission

In order to secure late information relating to all the applications for power sites on the Colorado River within the State of Arizona, and made inquiry of the Federal Power Commission, and under date of January 2, 1923, received the following data from Col. William Kelly, the chief engineer.

No. 111, Southern California Edison Co., Los Angeles, Calif.: Dam at Grand Wash just west of Nevada-Arizona line, backing water to Diamond Creek.

No. 119, California Edison Co., May 20, 1921, Los Angeles, Calif.: Dam at Diamond Creek, backing water to west boundary of park.

No. 130, Marin County, just above Park, developing head to Lee Ferry.

No. 238, Southern California Edison Co., Los Angeles, Calif.: Dam at Buks 142 head rock near Fort Mohave, 220 feet high, creating backwater to Old California.

No. 240, Old California, creating backwater to Grand Wash.

No. 258, City of Los Angeles, Calif.: Dam at Black Canyon, 500 feet high, develops 680,000 horsepower.

No. 261, James D. Girard, Phoenix, Ariz.: Dam at Grand Wash, creating backwater to Diamond Creek.

No. 262, Lee Ferry, 30 miles below Diamond Creek, to create backwater to Diamond Creek and develop about 45,000 horsepower.

No. 263, F. H. Bevan & Sons Co., San Francisco, Calif.: Dam at Parker, Ariz., creating backwater to Needles, Calif., and developing 15,000 horsepower.

No. 264, E. J. Boyard, Seligman, Ariz.: Series of dams from Boulder Canyon to Lee Ferry, developing all the power in the stream except the part within national park.

Applicant has made no showing of readiness to develop any part of the extension scheme.

### Annual discharge for the years ending September 30, 1908 to 1921—Continued

<table>
<thead>
<tr>
<th>Year</th>
<th>Maximum day</th>
<th>Minimum day</th>
<th>Annual run-off (acre-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Second-feet</td>
<td>Second-feet</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Date</td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Salt River at Middletown</td>
<td>20,000 Feb. 4</td>
<td>17,000 July 6</td>
<td>1,103,000</td>
</tr>
<tr>
<td></td>
<td>20,000 Dec. 17</td>
<td>24,000 July 6</td>
<td>1,103,000</td>
</tr>
<tr>
<td></td>
<td>20,000 Jan. 1</td>
<td>24,000 July 6</td>
<td>1,103,000</td>
</tr>
<tr>
<td></td>
<td>20,000 Oct. 1</td>
<td>24,000 July 6</td>
<td>1,103,000</td>
</tr>
<tr>
<td></td>
<td>20,000 May 1</td>
<td>24,000 July 6</td>
<td>1,103,000</td>
</tr>
<tr>
<td></td>
<td>20,000 June 1</td>
<td>24,000 July 6</td>
<td>1,103,000</td>
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<td>Hanceyam River near Wannamaker</td>
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1 Crest discharge on Jan. 29 estimated as 60,000 second-feet.

2 Crest discharge on Jan. 27 estimated as 105,000 second-feet.

On December 18, 1922, Hon. Frank W. Anderson, introduced a bill (H. R. 13049) granting the express and approval of Congress to the Colorado River compact, a report of which I shall print as an extension of my remarks. Nothing will be done with that measure until the compact is approved by the
CONGRESSIONAL RECORD—HOUSE.

Court of the United States in what is known as the "Rio Grande Dam case." 

During the administration of Mr. Taft a form of convention was presented by this country to Mexico, and was agreed upon for the settlement of the irrigation question and use of water on the Upper Colorado.

This convention was never executed nor the commissioners thereunto appointed because of the Mexican revolution, and the matter, as between the United States and Mexico, remains in this shape.

I now direct attention to the decisions of the United States Supreme Court in the case of United States vs. Rio Grande Irrigation Co. (174 U. S. 40; 184 U. S. 471), in which latter decision the court sets out the treaty provisions, equally applicable to the Rio Colorado, and states—

"These treaties, with the above and other acts of Congress, being in force, the present suit was brought."

And the court concluded by saying—

"...the events which have made it necessary that we proceed to a final decree upon the present record great wrong may be done to the United States, as well as to all interested in preserving the navigability of the Rio Grande."

We are the better for this disposition of the case because the questions presented involve rights secured by treaties concluded between this country and the Republic of Mexico. As the latter cannot be indifferent to the recovery of the litigation and suit, it is thought the court ought, not to determine the important question before us in the absence of material evidence which we are not at liberty upon this record to institute."

It will thus be seen that the Supreme Court finally recognized the rights of Mexico under treaty provisions and remedied the case for further evidence, among other reasons, because of the recognition of the treaty.

Thereafter, our Government entered into an arrangement with Mexico for the construction of a reservoir upon the Rio Grande, under the terms of which, among other things, Mexico was to be paid a perpetual rent from such reservoir for her use or that of her citizens free of all costs.

On January 8, 1913, a preliminary draft of a proposed convention with Mexico, dealing with the waters of the Colorado, was submitted by the Secretary of State to the Secretary of the Interior for his consideration and comment. Other preliminary drafts of proposed convention have been submitted by each Government and considerable discussion has taken place as to the correspondence on file in this department. The United States insisted upon the appointment of a commission to make studies; the Mexican Government insisted upon the Joint Boundary Commission making such studies. On February 12, 1913, the State Department of the United States proposed to accept the intention of proposed convention to this department, together with a copy of letter from Secretary Knox to the American ambassador in Mexico. The latter letter advised the Government of the United States of the intention of the ambassador to draw up the treaty directly from the substance of the present proposal and that the commission be accepted by the Mexican Government.

This proposal was approved by the Interior Department and submitted to Ambassador Wilson in the then Mexican administration. The treaty received the consent of the United States and was sent to Mexico for the ratification of the Mexican Government. The treaty was finally approved by both Governments but without final conclusion, either by treaty or appointment of commission.

The matter received consideration during the Wilson administration, various references thereto being made in official correspondence.

In October, 1921, I received from the State Department a communicate to the effect that the convention of 1913 between the Mexican and the U.S. Governments had been ratified by the Mexican Government and that the Senate of the United States had the treaty under consideration.

The provisions of this treaty and the articles of the treaty of Guadalupe Hidalgo referred to as the Supreme

Legislature of all of the seven interested States, because Congress, by the act of 1890, granting the consent and approval of Congress to the Colorado River compact, which measure is designed to ratify a compact made at Santa Fe on December 30, 1889, between the seven States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, and approved by a representative of the United States, was submitted to your committee by the Secretary of the Interior for his consideration and comment. Other preliminary drafts of a proposed convention have been submitted by each Government and considerable discussion has taken place as to the correspondence on file in this department. The United States insisted upon the appointment of a commission to make studies, the Mexican Government insisted upon the Joint Boundary Commission making such studies. On February 12, 1913, the State Department of the United States proposed to accept the intention of the proposed convention to this department, together with a copy of letter from Secretary Knox to the American ambassador in Mexico. The latter letter advised the Government of the United States of the intention of the ambassador to draw up the treaty directly from the substance of the present proposal and that the commission be accepted by the Mexican Government.

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CONGRESSIONAL RECORD—HOUSE. 

JANUARY 30, 1922.

Hon. Albert H. Fall, Secretary.

Respectfully, 

FRANK D. INGERSOLL.

[Editorial Note: The text appears to be a letter discussing the construction of a reservoir by the government for the impoundment of water for the protection of the Colorado River. The letter mentions the rights of the United States and Mexico and the need for the treaty rights of Mexico to be protected.

Section 2 of the bill apparently covers the same subject matter as Section 4 of the act and granting the consent and approval with respect to the rights of the water of the Colorado River, treated in Article VIII of the compact, 1 direct attention to the fact that the United States Government has completed and is constructing several important works on the river and its tributaries and investigations have been made of other projects which may at some time be undertaken. I also direct attention to the existing systems of irrigation which are being maintained in the Imperial Valley of the Colorado in the United States, as well as certain lands in Mexico, the main canal passing through Mexico for a long distance prior to entering the irrigable lands of Imperial Valley. With respect to the effect of this project to be undertaken to raise water to the Colorado and Illinois Valleys, a complete report of the United States Department of Agriculture and the United States Department of the Interior, has been considered by the State Department to be a sound and accurate statement of the international law governing such cases.

The decision of the Secretary of the Interior to proceed with the case of United States v. Arizona and Colorado Irrigation Co. no way modified or disturbed the legal principles thus laid down by Attorney General Harmon.

The references made by Secretary Fall to the various beneficial efforts that have been made to conclude a convention between the United States and Mexico dealing with the waters of the Colorado River have been placed in the hands of the parties interested. The problems of the compact are fraught with the acceptance by the interested States of some such compact confirms what I understand to be a fixed policy of the Hurst administration. I am informed that it has been agreed that no applications for power on the Colorado River shall be granted until the Colorado River compact is approved by the legislature of the three States and by Congress. This includes the application of the Secretary of the Interior for the permission to proceed.

The report of the Secretary of the Interior, Mr. James B. Girard, for the Diamond Creek Water Company which is to be submitted for consideration by the Senate. The report of the Secretary of the Interior for the permission to proceed with the Diamond Creek Water Company is a matter of great importance. The report contains many valuable recommendations and deals with the water rights of the States and the problems involved in the development of the Colorado River.

Very truly yours,

John W. McCall, Chairman.

That it will be noted that the Secretary of the Interior has approved the compact. The Secretary of the Interior also favors its approval by Congress except that, in his opinion, Congress should not agree to paragraph (a) of Article IV, which makes navigation subservient to domestic, agricultural, and power uses. His objection is based upon the fact that to do so might violate the terms of existing treaties with Mexico. This advice by Secretary Fall is corroborated, since the Department of the Interior has no jurisdiction over the question of the navigability of streams within the United States, which is a function of the Department of Justice, and the conduct of all foreign relations is vested by law in the Department of State. This advice may therefore be considered as merely an expression of his personal views, which, however, should be given weight from a distinguished international lawyer who has made a profound study of Mexican affairs.

Since the Secretary of the Interior has made these observations upon a matter over which he has no authority, it is more free to say that I do not agree with him at all. First, because, in truth, navigation is new, and for many years has been, the least of all the uses of the waters of the Colorado River and there is no way in which Mexico can suffer any injury by a frank recognition of this fact. Second, because the provisions of the treaties quoted and referred to by Secretary Fall do nothing more than prohibit action by which the right of Mexico along the common boundary line which might impede navigation in the Colorado River, therefore, anything done wholly within the United States and not along the common boundary line in no way disturbs the spirit of these treaties even though navigation were made impossible.

Third, because the general proposition that Mexico has any interest in maintaining the navigability of that part of the Colorado River which flows through Mexico is completely refuted by the opinion of Attorney General Judson Harmon, dated December 22, 1895, a part of which has been quoted by Mr. Innes in his answer to one of our questions. I am informed that this opinion has been considered by the State Department to be a sound and accurate statement of the international law governing such cases.

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Very truly yours,

John W. McCall, Chairman.
PROTECTION OF Field IN BOUNDARY WATERS.


INDUCTION OVER BOUNDARY WATERS FOR SPECIFIC PURPOSES.

1. North Dakota, South Dakota, Minnesota, Wisconsin, Iowa, and Nebraska: March 4, 1921. (Stat. L. vol. 41, pp. 1447ff.)

CONSTRUCTION AND OPERATION OF TUNNELS.


DEVELOPMENT OF THE FORT OF NEW YORK.


CONSTRUCTION, MAINTENANCE, AND OPERATION OF WATERWORKS.


THE MOWREY BILL.

The following is a copy of H. 1, 13480, which contains the text of the Colorado River compact.

IN THE HOUSE OF REPRESENTATIVES.

December 18, 1922.

Mr. Mowry introduced the following bill, which was referred to the Committee on Irrigation of Arid Lands and ordered to be printed.

A bill (H. R. 13480) granting the consent and approval of Congress to the Colorado River compact.

Whereas the act approved August 19, 1921, entitled "An act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming respecting the Colorado River and other waters of the drainage area of the Colorado River, and for other purposes," gave the consent of Congress to the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming to negotiate and enter into a compact, or agreement providing for an equitable distribution and apportionment among the said States of the waters of the Colorado River and of streams thereto, upon condition that the same or a like purpose may be approved by the United States; and

Whereas the authority of said act to the representative commissioners of the said States held on the 24th day of November, 1922, at the city of Santa Fe, N. Mex., sign a compact under the provisions of the said act, which compact, when approved by the representative appointed by the President of the United States; Therefore

Be it enacted, etc. That the consent and approval of Congress is hereby given to a compact signed at the city of Santa Fe, N. Mex., on the 24th day of November, 1922, under and in accordance with the authority of the act approved August 19, 1921, entitled "An act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming respecting the division and apportionment of the waters of the Colorado River, and for other purposes," and that the compact, when so signed, shall be final and binding upon the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming and the representative appointed by the President of the United States under said act, which compact is as follows:

COLORADO RIVER COMPACT.

The States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, having resolved to enter into a compact under the act of the Congress of the United States of America approved August 19, 1921 (42 Stat. 171), and the acts of the legislature of the said States, have, through their governors, appointed as their commissioners:

W. S. Norvell, for the State of Arizona;

W. F. McClure, for the State of California;

D. W. Parley, for the State of Colorado;

G. G. Scrugham, for the State of Nevada;

Stephen H. Davis, for the State of New Mexico;

H. E. Caldwell, for the State of Utah;

R. E. Emler, for the State of Wyoming;

who, after negotiations participated in by Herbert Hoover, appointed by the President as the representative of the United States of America, have now agreed upon the following acts in considering the purposes of this compact are to provide for the equitable division and apportionment of the use of the waters of the Colorado River system; to establish the relative importance of the several uses of water; to promote irrigation among the said States of the Colorado River; to remove causes of present and future controversy; and to secure the expeditious agricultural and industrial development of the Colorado River Basin, the waters of the said basin, the lands within it, and other waters, and the protection of life and property from floods. To these ends the Colorado River Basin is divided into seven basins, and an apportionment of the use of part of the water of the Colorado River system is made in such a way as to provide that further equitable apportionments may be made.

ART. 41. As used in this compact—

(a) The term "Colorado River system" means the part of the Colorado River and its tributaries within the United States of America.

(b) The term "Colorado River Basin" means all of the drainage area of the Colorado River system and for each State to which the waters of the Colorado River system shall beneficially be applied.

(c) The term "States of the upper division" means the States of Colorado, New Mexico, Utah, and Wyoming.

(d) The term "States of the lower division" means the States of Arizona, California, and Nevada.

(e) The term "Lee Ferry" means a point on the midpoint of the stream of the Colorado River, 1 mile below the mouth of the Turquoise River.

(f) The term "upper basin" means those parts of the States of Arizona, California, Colorado, Montana, and Wyoming within and from which water is naturally drawn into the Colorado River system below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River system which are now or hereafter be beneficially served by waters diverted from the Colorado River system below Lee Ferry.

(g) The term "lower basin" means those parts of the States of Arizona, California, Nevada, and Utah, and Wyoming within and from which water is naturally drawn into the Colorado River system below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River system which are now or hereafter be beneficially served by waters diverted from the system below Lee Ferry.

(h) The term "domestic use" shall include the use of water for household, stock, municipal, mining, industrial, and other like purposes, but shall exclude the generation of electrical power.

(i) There is hereby apportioned from the Colorado River system in perpetuity to the upper basin and to the lower basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist.

(ii) In addition to the apportionment in paragraph (i), the upper basin is hereby given the right to irrigate the beneficial consumptive use of such waters by 1,000,000 acre-feet of the year 1920 to the year 1925, and thereafter, the beneficial consumptive use of such waters shall be apportioned to the lower basin.

(j) As a matter of interstate compacts, the United States of America shall hereafter recognize in the Colorado River basin the right to irrigate the beneficial consumptive use of such waters by 1,000,000 acre-feet of the year 1920 to the year 1925, and thereafter, the beneficial consumptive use of such waters shall be apportioned to the lower basin.

(k) The States of the upper basin shall not withhold water, and the States of the lower division shall not require the delivery of water, which can not reasonably be applied to domestic and agricultural uses.

(l) Further equitable apportionment of the beneficial use of the waters of the Colorado River system unappropriated by paragraphs (b), (c), and (m) and the manner provided in paragraph (j) at any time after October 1, 1925, if and when such shall be made shall be set out in paragraphs (n) and (o).

(m) In the event of a desire for a further apportionment as provided in paragraph (j) by any two signatory States using through these governors and such notice shall be made by the states of the other signatory States and to the President of the United States of America, it shall be the duty of the governors of the signatory States and of the President of
the United States of America forthwith to appoint representatives, whose duty it shall be to divide and apportion the Territory of the United States, as between the upper and lower basins of the Colorado River system, as hereinbefore mentioned, and to apply the water of such river as may be necessary for irrigation, navigation, and other purposes. In pursuance of which, the Congress of the United States is hereby authorized to make such regulations as may be necessary for the purposes aforesaid, and such regulations shall be subject to the approval of the President of the United States.

"Sec. IV. (a) The Congress of the United States is hereby directed to provide, in such respects as may be necessary, for the construction, maintenance, and operation of canals, aqueducts, and other works for the improvement of the Colorado River and its tributaries, and for the construction of bridges and other works for the purpose of facilitating navigation on said river and its tributaries. In pursuance of which, the Congress of the United States is hereby authorized to appropriate such sum as may be necessary for the purpose aforesaid, and such appropriation shall be subject to the approval of the President of the United States.

"Sec. V. The Congress of the United States is hereby directed to provide, in such respects as may be necessary, for the protection of the inhabitants of the Territory of the United States from the attacks of Indians, and for the maintenance of law and order in said Territory. In pursuance of which, the Congress of the United States is hereby authorized to appropriate such sum as may be necessary for the purpose aforesaid, and such appropriation shall be subject to the approval of the President of the United States.

"Sec. VI. The Congress of the United States is hereby directed to provide, in such respects as may be necessary, for the education and civilization of the Indian tribes residing within the Territory of the United States. In pursuance of which, the Congress of the United States is hereby authorized to appropriate such sum as may be necessary for the purpose aforesaid, and such appropriation shall be subject to the approval of the President of the United States.

"Sec. VII. The Congress of the United States is hereby directed to provide, in such respects as may be necessary, for the construction of roads and bridges within the Territory of the United States. In pursuance of which, the Congress of the United States is hereby authorized to appropriate such sum as may be necessary for the purpose aforesaid, and such appropriation shall be subject to the approval of the President of the United States.

"Sec. VIII. The Congress of the United States is hereby directed to provide, in such respects as may be necessary, for the protection of the property and persons of the inhabitants of the Territory of the United States from the attacks of the enemy. In pursuance of which, the Congress of the United States is hereby authorized to appropriate such sum as may be necessary for the purpose aforesaid, and such appropriation shall be subject to the approval of the President of the United States.

"Sec. IX. The Congress of the United States is hereby directed to provide, in such respects as may be necessary, for the promotion of agriculture and the encouragement of industry within the Territory of the United States. In pursuance of which, the Congress of the United States is hereby authorized to appropriate such sum as may be necessary for the purpose aforesaid, and such appropriation shall be subject to the approval of the President of the United States.

"Sec. X. The Congress of the United States is hereby directed to provide, in such respects as may be necessary, for the protection of the property and persons of the inhabitants of the Territory of the United States from the attacks of the enemy. In pursuance of which, the Congress of the United States is hereby authorized to appropriate such sum as may be necessary for the purpose aforesaid, and such appropriation shall be subject to the approval of the President of the United States.

"Sec. XI. This compact shall become binding and obligatory when it shall have been approved by the Congress of the United States and the President of the United States, and shall remain in force until the President of the United States shall cause it to be annulled. In witness whereof the said parties have signed this compact and caused it to be authenticated in duplicate, which shall be deposited in the archives of the States of the United States of America, and of which a certified copy shall be forwarded to the President of the United States.

"A.D. 1872.

"Approved:

"HARRIET HOWARD.

"Sec. 2. That the said compact shall not be binding and obligatory upon any of the parties thereto unless and until the same shall have been approved by the President of the United States and pronounced thereof shall be made by the President upon receipt by him of the approval of the Congress of the United States of notice of approval of such compact by the legislative bodies of the United States.

"W. R. CLARK, Ex-Officio Secretary, Mina, N. Y.

"Mr. CLARK of New York. Mr. Speaker, I ask unanimous consent to extend my remarks in the Recount by inserting in Spoliation type a copy of my speech at the dedication of the First Ward Endowment Stadium at Springfield, N. Y., with the statement of the labor policy of the Endowment Johnson Corporation.

"Mr. STAFORD. It is not necessary that gentlemen repeat that their remarks be printed in Spoliation type. The gentleman's own remarks they will be printed in Spoliation type.

"The SPEAKER. Is there objection?

"There was no objection.

"Now having the speech and statement referred to:

"SPEECH AT DEDICATION FIRST WARD ENDOWMENT STADIUM, SPRINGFIELD, N. Y.

"Fellow members of the First Ward Endowment Athletic Association, I was glad to become a member of this athletic association about a year ago, and I am doubly glad and proud to claim membership now when I see this wonderful athletic field and stadium fully complete with facilities that you have built. Helpfulness is the best test of the success or failure of the work of our institutions; our Government; our civilization itself.

"On every hand we find many monuments that bear their silent but certain testimony of the men and hero women who contributed their time and means and selves in order to be helpful, to lighten the loads of others less fortunate, to make easier the way, to render opportunity more accessible to all.

"Our schools, our hospitals, our churches; yes, our Government itself, all bear the indelible imprint of hearts and minds—yes, lives—dedicated to helpfulness, not individual, but to the children of this day but to all of the children of all the tomorrows.

"Tom Brown dollapsed his cap as he stood at the grave of his beloved teacher, Doctor Arnold, of Rugby. A flood of memories of school days came rushing back to his dear old beloved teacher and put of himself in his effort to help his boy.

"Sir Christopher Wren was the architect of St. Paul's Cathedral in London; he put of himself in his work, and fitting the epitaph you may almost name of his masterpiece, "So you seek the monument look about you.

"So, too, this wonderful stadium is an enduring monument, to the eight ominous pioneers who conceived and carried it first in the minds of the people to the Ameo Co for its unselfish contributions; to Frank Walters and Roy Barnes for willingly and cheerfully assisting in directing the efforts of the multitude of men, enthusiastic souls; but most of all to that kind and kindly heart, who understood the yearnings of these young people.

"Christened in the laboratory of honest toil, tried and true, and found the fulfillment of one of competition. No successful effort in this community seems to escape your observation or fails to enlist your heart and thoughtful cooperation.

"Helpfulness is your watchword, as it should be ours.