NOTES ON THE COLORADO RIVER COMPACT.
(Compiled by Judge W.M. Searcy, January 29, 1923)
(For The Durango Exchange)

These notes are not intended to be a criticism of the Inter-
State Treaty; but are intended to assist in calling attention to the
actual effect of that Treaty or Compact upon the four states con-
stituting the Upper Basin; and through that to ascertain the effect
upon the future of the San Juan Basin and the Western Slope of
Colorado.

It is possible that a Compact of some kind is necessary to
protect the Upper States as against the probable appropriation of
water by the immense reservoir, the construction of which is con-
templated. It is reasonably certain that if any such reservoir
shall be constructed it will make a claim of appropriation of
water for irrigation as well as for power purposes.

But, whatever may be the necessity of making a compact, and
whatever the effect of this present proposed Compact may be, it is
our duty to use every possible effort to ascertain in advance the
probable effect of that Compact before it shall be adopted.

If the Compact be once ratified, then it is irrevocable, ex-
cept by unanimous consent, and binds the State of Colorado for all
time.

The following are miscellaneous notes upon the Report of Hon.
Dolph A. Carpenter, Commissioner for Colorado (including the tables
prepared by Mr. Meeker) and upon the Compact itself, all as published
in the Senate Journal, January 5, 1923, at pages 44 to 45 inclusive.

1. No information is given concerning the possible extent of
the claim of Old Mexico, to arise in the future. The Imperial
Valley district extends into Old Mexico; and it is known that some
very extensive ranches are situated partly or wholly below the
Mexican line.

Naturally, there is no definite information as to how
much water can be or may be diverted out of this Upper Basin through
tunnels. Mr. Meeker estimates that the Eastern Slope suggested
tunnels would not take over five per cent of the water. It should
be noted that whatever water is so diverted outside of the Basin
becomes totally "consumed" under the Compact.

2. It is estimated in the Meeker Report that the total flow
of the whole Colorado River System is 20,500,000 acre feet per annum.
The flow of the Upper Basin is estimated at 17,500,000
acre feet per annum. By examination of the Compact it will be seen
that it is this last given figure that has been the important bearing
upon the Compact. The engineer has estimated that the average tunnel
flow at Lee Ferry has been about 15,000,000 acre feet. (See E. C.
LaRue, Proceedings of American Society of Civil Engineers, April, 1922
at page 840. Mr. La Rue seems to have made Water Supply Paper No. 395
U.S. Geological Survey 1916.)

3. In Table 1, page 49, Mr. Meeker shows that 2,000,000
acre feet are now being consumed by all of the seven states.
In Table 5, on page 50, he shows that the present con-
sumption by the four states of the Upper Basin is 2,500,000 acre feet.
Thus indicating that the present consumption of the
Lower Basin is 4,500,000 acre feet.

4. In Table 3, on page 49, Mr. Meeker estimates the entire
future requirements of the Upper Basin, including Colorado, New Mex-
ico, Utah and Wyoming, of water actually consumed, at 2,000,000 acre
feet.

Again on page 50, Table 5, Mr. Meeker repeats that esti-
mate.
It will become apparent, in construing the Compact, that this particular point of estimation or forecast is of exceeding importance.

5. In Table No. 6, page 50, Mr. Meeker shows that the present acreage of irrigated land, on the Western Slope in Colorado alone, is 859,000 acres.

He also shows, in the same table, an estimate that the amount of water actually consumed in irrigating that acreage, is 1,100,000 acre feet.

That estimate, therefore, seems to show, an actual consumption of water of 1.26 acre feet for each acre of land irrigated.

6. In the same Table 6, on page 50, Mr. Meeker estimates that there are 1,500,000 acres, on the Western Slope, in Colorado alone, yet to be irrigated.

At the same rate of 1.26 acre feet of water to the acre irrigated, that acreage alone would actually consume 1,920,000 acre feet of water, in Colorado.

His total estimate for those lands of the Western Slope, and future diversions to the Eastern Slope (trans-mountain) is 2,600,000 acre feet.

To appreciate the importance of these figures, the actual future needs of the San Juan Basin, situation only partly in Colorado, must be taken seriously into account.

7. The San Juan Basin is so extensive and so little developed that any estimate of its possible future development, will naturally fall short of the facts.

But it has been reliably estimated that there are at least 3,000,000 acres of first class farming land in the San Juan Basin, of which the greater part, in time, can be irrigated.

The Government measurements and reports show that the annual flow of the San Juan River System, including the Dolores River, which has already been turned into the Basin, is over—

3,000,000 acre feet.

A large proportion of the irrigable land in each of these counties of Colorado (in this Basin) has not yet been irrigated.

The percentage of irrigable lands irrigated is very small.

It is reliably estimated that by a reservoir and canal water can be taken from the San Juan River and applied to land south of the river in New Mexico, to the extent of 500,000 acres—and probably 1,000,000 acres, if there were sufficient water.

South of the San Juan River on the Reservation; and north of the San Juan River in the Meadows country—and also farther along northwest of Shiprock are very large tracts subject to irrigation.

Between Pine River and the Florida River; between the Animas River and the La Plata River; and south of the Montezuma Valley, are very large tracts subject to irrigation.

In the western part of the Basin, it is known, by survey, that with a storage reservoir and canal the waters of the Dolores River can be applied to a tract of land in Colorado of about 200,000 acres; and that if water enough can be obtained, the irrigation could be extended to several hundred thousand acres more, in San Juan County, Utah.

From the information on hand, it is safe to assume that the San Juan Basin, in progressing toward its full development, will use and consume the entire 3,000,000 acre feet of water arising from the San Juan Drainage System, and all of the unused flow that can be obtained from the Dolores River.

Of this present flow of over 3,000,000 acre feet per annum, the San Juan Basin, at this time, is using but a small part—probably not to exceed 400,000 acre feet.

It, therefore, becomes apparent that the San Juan Basin will need and consume, in the course of its future development, at least 2,600,000 acre feet per annum out of that total of 5,000,000 acre feet estimated as sufficient for the future of the four states of the Upper Basin.
Therefore, becomes a very serious question whether the 5,000,000 acre feet of water, estimated as sufficient for the future development of the whole Upper Basin (including Colorado and New Mexico, Utah, Wyoming and part of the Eastern Slope) will be anything like sufficient.

To make this point clear, the above mentioned Table 5, on page 50, summarizes as follows:

- Total allotment to Upper Basin = -7,500,000 acre feet.
- Present Consumption of the Basin = 2,500,000 acre feet.
- Allowed for the future of Upper Basin only = 5,000,000 acre feet.

The necessity for serious and careful consideration of this point, will appear later, herein.

NOTES ON THE COMPACT.

8. Under Article III, paragraph (a)——it would seem at first glance that the Upper Basin is clearly and absolutely allotted 7,500,000 acre feet of water per annum.

But that first paragraph (a) appears to be modified by paragraph (d), which requires that the Upper Basin shall at all times allow to flow past Lee Ferry an average of 7,500,000 acre feet per year. This paragraph (d), therefore, seems to give a priority to the Lower Basin to the extent of its first 7,500,000 acre feet from the flow out of the Upper Basin.

But, another clause, of rather peculiar wording and not entirely certain in meaning, is paragraph (b) of Article III, which provides in substance that in addition to the apportionment in said paragraph (a), "The Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by 1,000,000 acre feet per annum.

Mr. Reese has called attention to this paragraph (b), especially, and the seeming uncertainty of its application. If that paragraph (b) is to be so construed that the additional 1,000,000 acre feet per year for the Lower Basin cannot be taken out of the 7,500,000 acre feet per annum set apart by paragraph (a) to the Upper Basin—still it would seem that that paragraph (b) would, at any rate, allow the Lower Basin to take all of the water excepting said 7,500,000 acre feet.

It becomes most evident that we should not only have full and accurate information as to the actual average flow of the Colorado River, past Lee Ferry; but also that the legal construction which may be placed on this Compact in the future, should be most carefully considered.

9. Article VIII of the Compact seems to modify, in a very substantial way, the effect of the whole Compact.

The examination of that Article VIII (of the construction of it) implied by the wording of Mr. Carpenter's report, at the bottom of page 47 and at the top of page 48, does not seem to cover the effect of Article VIII as judged by its actual wording.

Article VIII contains three divisions. The central division declares, in substance, that a storage reservoir for 5,000,000 acre feet, if constructed within the Lower Basin, or within the Upper Basin for the benefit of the Lower Basin, may, through its appropriators or users of water (presumably for irrigation purposes), claim rights of priority against the appropriators of water in the Upper Basin——"not in conflict with Article III".

Article VIII then closes with a provision that "All other rights to beneficial use of waters of the Colorado River System shall be satisfied solely from the water apportioned to that Basin in which they are situated."——Thus indicating that the 5,000,000 acre feet so appropriated by the big reservoir, by storage, and applied to irrigation of lands in the Lower Basin, shall not come out of the 7,500,000 acre feet allocated to the Lower Basin.
Now, according to the irrigation laws of the West, ordinarily the appropriation of the water so to be stored in the contemplated reservoir, would relate back to and date from the date of commencement of construction, or the date of commencement of survey, etc.

Furthermore, in the construction of storage reservoirs, the association or company which constructs the reservoir, naturally and almost without exception, files claim to the use of the reservoir for irrigation purposes, even though the water stored may also be used for production of electric power.

It may, therefore, be assumed that any such reservoir, so constructed, would claim priority of appropriation of all the water stored, for irrigation purposes in the Lower Basin, from the date of commencement of construction.

Therefore, it seems that the claim of the storage reservoir allowed by this compact, for at least 5,000,000 acre feet, for irrigation in the Lower Basin, would come (at the latest) next in priority after the 7,500,000 acre feet allocated to the Upper Basin in paragraph (a) of Article III.

The allocation and appropriation of the waters flowing out of the Upper Basin would, therefore, be affected and regulated by both paragraph (b) of Article III, and by the above mentioned provisions of Article VIII; and the resulting division and priority of the claims of the Upper Basin and Lower Basin, respectively, would be as follows:

1st. Allotment of water to pass Lee Ferry for Lower Basin -- -- -- -- -- -- 7,500,000 a.ft.
2nd. Allotment to Upper Basin -- -- -- -- -- -- 7,500,000 a.ft.
3rd. Extra Allotment to Lower Basin, under Par. (b) of Art.III=1,000,000 a.ft. per year but -- -- -- -- -- -- -- no limit fixed
4th. Storage Reservoir appropriation, allowed Lower Basin, Under Art. VIII -- -- -- 5,000,000 a.ft.

Total--so far as made definite -- -- -- -- 20,000,000 a.ft.

In other words, if this construction of the Compact is right, there can be and will be no surplus out of which the Upper Basin can ever receive anything more than its first 7,500,000 acre feet

10. Turning now to the 7,500,000 acre feet which seems to be allotted to the Upper Basin, we again notice that it is estimated by Mr. Meeker that 2,500,000 acre feet of that allotment are already being consumed.

That leaves, then, only 5,000,000 acre feet of water to meet the needs for the future development of the four states of the Upper Basin,-- and from that total amount must be deducted, of course, whatever amount shall be diverted through the mountains, by tunnel or otherwise, to outside of the Upper Basin.

As heretofore indicated, the San Juan Basin is not yet irrigating ten per cent of its irrigable lands. It is using only a small part of the water that it will eventually need; it has not yet commenced upon storage and the irrigation of the large tracts that will store and apply the flood waters.

If the San Juan Basin should apply and consume, its further capacity of use, of 2,600,000 acre feet, as above estimated, there would be only 2,400,000 acre feet remaining out of the whole 5,000,000 acre feet, for the development of all the other portions of the Upper Basin--Colorado, Utah and Wyoming.

11. It must be remembered, that neither the San Juan Basin nor any other section of this great Upper Basin, can be considered by
itself under the apportionment made by the Compact. All of the numerous irrigable districts of the whole Upper Basin must, in one way or another, share and suffer any deficiency which may arise in the distribution of that 5,000,000 acre foot over the whole Upper Basin.

It, therefore, becomes very essential and vital that a full and careful consideration shall be given to this great Upper Basin, and its possibilities of agricultural development, before the Compact shall be ratified in its present form.

12. The Upper Basin, as a whole, is larger than the entire State of Colorado. While it originates a very great flow of water, it is also true that the primary source of that great flow of water consists of a very great number of small rivers and creeks, with almost numberless valleys, mesas, and plains - tracts, subject to future irrigation from these numerous streams.

This Upper Basin constitutes the new and undeveloped, and to a considerable extent almost unexplored, portions of these Upper States.

A large proportion of the Upper Basin was only recently Indian lands; and much of this Basin is still covered by Indian Reservations. Large sections of the Basin have not yet been surveyed or subdivided.

13. Under these conditions, it is entirely safe to say that there is not a citizen in Santa Fe, Denver, Salt Lake City or Cheyenne who is fairly well acquainted, or acquainted at all, with all of the many sections of this great country and the extent to which each section is capable of future development by irrigation. It is simply impossible for any man who has not spent years in that investigation alone to have any full or fair knowledge of the whole Upper Basin. We who have lived here in the San Juan Basin for 30 years have not yet learned nor summarized the irrigable tracts of our own Basin.

The above considerations will indicate the grave danger involved in making an everlasting Treaty limiting the waters for, and therefore the future development of, this Upper Basin—constituting as it does a new, naturally rich and undeveloped country, larger than a state and constituting a valuable part of four states.

14. In illustration of the above suggestions, attention is now called to the fact, that, outside of the San Juan Basin which is above described in a general way, there are a great number of other streams, with their respective valleys and irrigable districts—all situated in the Upper Basin. And the country along and associated with each stream must be considered as to its future needs. The following are some of the larger rivers and tributaries, which ought to be investigated and considered:

1. Dolores River
2. Disappointment Creek
3. Uncompahgre River
4. Lake Fork, Gunning
5. Gunning River
6. East Fork, Gunning
7. North Fork, Gunning
8. Plateau Creek
9. Crystal River
10. Traying Pan
11. Eagle River
12. Elk
13. Roaring Fork
14. Blue River
15. Williams Fork
16. Fraser River
17. South Fork—Grand
18. Grand River, Main Stream
it may be that there are other streams of substantial flowage overlooked and omitted from the above list. Numerous creeks which have been measured by the U.S. engineers are omitted.

Also, it may be true, that a number of the above streams cannot be applied to irrigation. The very point of the whole matter is that we do not know what their capacity for developing irrigated land may be.

The Federal Government has made numerous measurements of the flowage of streams in this Upper Basin.

So far as we know, no one, either on behalf of the Federal Government or the State Governments, has ever undertaken to ascertain the actual acreage that can, in the future, be irrigated from these many streams.

15. Considering that the Compact, if ratified by the Colorado Legislature, will become a supreme and governing law, perpetual and irrevocable,

Considering the close limitation which that Compact, according to its actual terms, and in its practical effect, places upon the Upper Basin as to water for future development;

Considering the very little that is known or could have been known concerning the needs and capacity of future development of the many large sections which make up the Upper Basin;

Considering what it will mean to the future development and prosperity of those parts of New Mexico, Colorado, Wyoming and Utah situated in the Upper Basin, if the supply of water left to the Upper Basin shall be insufficient;—

We have felt justified in presenting these notes for consideration of our members of the General Assembly.

It would seem that a broad and careful investigation ought to be made of the future needs of the Upper Basin, district by district, in one way or another, before the Compact shall be finally ratified.

And it would also seem that the provisions of the Compact should be very carefully considered from the standpoint of their actual and practical final effect upon this Upper Basin—before any ratification.

From such facts as now appear, the amount of water which will finally remain for the Upper Basin, in the course of 20 and 40 years will not be sufficient.

16. These notes are compiled with such aid as the engineers and attorneys could give. It was considered best that these matters be presented immediately, so that they might aid a little toward the making of the necessary investigations.

As intimated at the beginning, there may possibly be some reason why Colorado should hasten to ratify the proposed Treaty or Compact—regardless of being cut short in the water needed for future development. But we are not informed of any such reason, at this time.

No attempt has been made to review the provisions concerning storage of water for power purposes. That matter, also, ought to receive careful consideration.