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## STATISTICS OF THE MISSISSIPPI RIVER.

BY H. L. WHITING, WASHINGTON, D.C.

PERSONS familiar with the range of tide along the seaboard can hardly realize how much the waters of our great interior rivers are affected by the rainfalls and watershed upon and from the vast surrounding valleys. The records of the Mississippi River Commission give much relevant data in regard to these phenomena. The following figures have been selected, from the voluminous reports of the Commission, to give more briefly a knowledge of facts that do not come before the general public. As an instance of the great rise and fall of the Mississippi River at Cairo — at its confluence with the Ohio — in the spring of 1891, at its low-water stage, the surface of the river was within a few inches of the top of the levee that protects the city of Cairo from inundation, and from the deck of the steamer the writer looked down into the streets of the city several feet below the line of the water rushing by with a velocity of nearly seven miles an hour. In the fall of the same year, at the low-water stage of the river, the steamer, at the same place, was fifty-one feet below the elevation at which she floated six months before; and this was not the greatest range of the river at this point.

Difference between highest and lowest water-readings.

## Mississippi River.

St. Louis, Mo.....	37.1 feet.
Cairo, Ill.....	53.2 "
New Madrid, Mo.....	41.4 "
Memphis, Tenn.....	34.5 "
Helena, Ark.....	48.0 "
Mouth of White River, Ark.....	48.4 "
Greenville, Miss.....	40.8 "
Vicksburg, Miss.....	51.1 "
Natchez, Miss.....	49.9 "
Mouth of Red River, La.....	48.5 "
Baton Rouge, La.....	36.0 "
Plaquemine, La.....	29.9 "
College Point, La.....	23.7 "
Carrollton (New Orleans).....	15.9 "

## Atchapelaya River.

Simmsport, La.....	38.3 "
West Melville, La.....	30.4 "

## Red River.

Shreveport, La.....	25.5 "
Alexandria, La.....	40.2 "
Barber's Landing, La (Head of Atchapelaya).....	51.1 "

## Arkansas River.

Little Rock, Ark.....	31.0 "
Pine Bluff, Ark.....	29.5 "

## White River.

Jacksonport, Ark.....	33.9 feet.
Clarendon, Ark.....	28.8 "

## St. Francis River.

Wittsburg, Ark.....	44.9 "
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## Tennessee River.

Florence, La.....	30.4 "
Chattanooga, Tenn.....	54.0 "

## Cumberland River.

Nashville, Tenn.....	55.6 "
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## Ohio River.

Paucha, Ky.....	54.2 "
Cincinnati, Ohio.....	69.1 "
Louisville, Ky (Upper).....	45.5 "
Louisville, Ky (Lower).....	71.0 "

## Areas of Overflow.

St. Francis Basin, Commerce, Mo., to Helena, Ark.	(east side of river) 6,090	{ 2,874 sq. miles.
	(west side of river)	
Illinois, Kentucky, and Tennessee.....	616	"
White and Arkansas Basins (west side of river), Helena to Arkansas City.....	956	"
Yazoo Basin (east side of river), Memphis, Tenn., to Vicksburg, Miss.....	6,648	"
Macon, Boeuf, and Tennessee Basins (west side of river), Arkansas City to Red River.....	4,955	"
East side of river, Vicksburg to Baton Rouge... Atchapelaya Basin (west side of river), Red River to Bayou La Fourche.....	415	"
Pontchartrain Basin (east side of river), Baton Rouge to Gulf of Mexico.....	6,085	"
La Fourche Basin (west side of river), Donaldsonville to Gulf of Mexico.....	2,001	"
	2,024	"
	29,790	

Nearly thirty thousand square miles, or three and a half times the area of the State of Massachusetts.

Although, as stated, the high-water depth of the Mississippi River at Cairo is over fifty feet, the low-water depth, on shoals and bars, does not exceed four feet. This great highway to the ocean is, therefore, at these latter seasons, practically unavailable for navigation. Ten of the large steamers of the Anchor Line, which ply between St. Louis and New Orleans, are now laid up, while the elevators of St. Louis have accumulated some nine million bushels of wheat, waiting transshipment.<sup>1</sup> This is but a partial showing of the importance of the improvement of the Mississippi River, in its low-water navigation, to the commercial interests of the country; aside from the injury to agricultural interests from the overflow of the lower basins of the river.

## ON THE USE OF THE COMPOUND EYES OF INSECTS.

BY R. T. LEWIS, EALING, ENGLAND.

FEW subjects connected with the study of insects have given rise to more widely differing opinions than the rationale of their complex organs of vision, the physical structure of which presents to us one of the most elaborate optical combinations to be found in nature, and this, too, upon a scale so minute as to require no ordinary skill on the part of the microscopist to unravel its marvels.

Attempts to work out the problem as to what is the impression produced upon the consciousness of an insect by an arrangement so complicated have seldom resulted in satisfactory conclusions, not a few failures in this respect apparently being due to inadequately clear conceptions as to the application of the laws and phenomena of refraction to the cases in point. But whether the subject is approached from the standpoint of those who regard an organ as having elaborated itself in obedience to the necessities of

<sup>1</sup> November, 1892.