UNIVERSITY AND EDUCATIONAL NEWS

By action of the corporation the chair of the theory and practise of medicine at Yale University will hereafter be known as the John Slade Ely professorship of the theory and practise of medicine. This action was made possible by the gift to the university of $50,000 by an unknown donor for the purpose of establishing a memorial to Professor Ely, '81S., who filled this chair from 1897 until his death, February 7, 1906. Dr. George Blumer at present holds this professorship.

It is announced that Hamilton College will receive a bequest of $50,000 from Mrs. Annie P. Burgess, of New York City, who died about three years ago, leaving for educational and charitable purposes upward of $200,000. This included $10,000 to Columbia University and to Barnard College for scholarships. After making some other specific bequests she left the remainder of her estate to Hamilton College, Columbia University and Barnard College.

Among the bequests left by the late Mrs. Emma Cummings, of East Hampton, L. I., are $25,000 to Dartmouth College and $25,000 to Bowdoin College.

The late Dr. Charles H. Roberts, of Highland, N. J., in his will provided for the founding of five scholarships of $240 annually at Cornell University.

Harvard University has received a gift of $150,000 for the endowment of the University Chapel. The fund is to be known as the Edward Wigglesworth Memorial Fund.

Maryville College, Tennessee, has secured an endowment of $227,000, of which $50,000 is from the General Educational Board and $50,000 from Mr. Andrew Carnegie.

The University of Michigan has acquired by gift of an alumnus, and from the city of Ann Arbor, a tract of land of about ninety acres to serve as a botanical garden and arboretum. This land has an exceptional variety of soil, elevation and exposure, including a border of over one half mile on the Huron River, easily accessible from the campus. The Woman's League of the university has purchased a seven-acre tract of land, convenient of access, which will be developed as an athletic field for the women of the university. Another gift is of about fifteen hundred acres of land, lying along the shores of Douglas lake in Cheboygan county. This land will serve as the site for the summer engineering camp, and its topography, including forest and open, land and water, various elevations, etc., is well adapted to the purpose. In honor of the donor it has been named The Bogardus Engineering Camp.

Mrs. S. T. Robinson, of Lawrence, Kansas, is offering an opportunity to all women who graduate from the science department of the University of Kansas to do research work in connection with the research table supported by her in the Marine Biological Laboratory at Woods Hole.

The Russian government has decided to establish a new university at Saratoff, and the duty of organizing it has been entrusted to Dr. Rasumowsky, professor of surgery at Kasan.

Governor Draper, of Massachusetts, has appointed Mr. Frederick P. Fish, of Brookline, to be a member of the State Board of Education, to succeed the late Carroll D. Wright. Mr. Fish is a member of the board of overseers of Harvard College and a member of the corporation and executive committee of the Massachusetts Institute of Technology.

DISCUSSION AND CORRESPONDENCE

THE MISSISSIPPI CHANNEL BOTTOM AND GULF LEVEL

To the Editor of Science: The remarkably slight elevation above the sea of the lower flood plains of large rivers like the Mississippi, the Ganges and the Amazon is a matter of frequent comment. The facts are often put rather strikingly by saying that at St. Louis, 1,250 miles by river from the sea, the valley flat is but 400 feet above sea level; at Memphis, 842 miles from the sea, 220 feet; and at Vicksburg, 472 miles from the sea, 90 feet. The same fact is commonly expressed

in terms of the gradient of the river. The Mississippi has a gradient of a few inches per mile from Cairo to the gulf; while the Amazon, rapidly aggrading its flood plain and still quite under the dominion of the waste delivered to it, has, according to the best barometric determinations, an average gradient for the last 500 miles of only one eighth of an inch per mile![1] Barometic determinations are notably unreliable, but errors are at a minimum near sea level in the tropics and this value may be taken as indicative of at least the order of magnitude of the river gradient. The Nile has now been carefully measured by an almost complete line of leveling from Victoria Nyanza to the Mediterranean, a distance of 3,500 miles. It offers a similar set of conditions in its flattest part between Sorbat and Khartum, where the slope has been reliably determined to be from one half to one third of an inch per mile.[2] More striking is the statement of elevation in terms of channel bottom: "the bottom of the channel of the Mississippi is as much as 100 feet below the level of the gulf some 20 miles above New Orleans."[3]

It occurred to the writers that in the case of the Mississippi a possibly still more striking form of expression is that which refers the elevations of channel bottom to sea level, thus arriving at an upstream point where the plane of sea level intersects the channel bottom. The distance of this intersection from the sea or the river mouth is a very striking value indeed. The detailed results of our map examination are expressed in the following table which is compiled from the charts of the Mississippi River Commission based on the surveys of the period 1879–1884. The table shows the maximum depressions and elevations of the channel bottom that occur on each chart, the location of each point (referred to a station usually near some town or landing), together with its distance from the gulf. It will be observed that the first upstream point at which the channel bottom attains gulf level is 388 miles by river from the gulf. The most northerly point at which the bottom occurs at gulf level is 181 miles farther up the river, or 569 miles from the gulf! Here in a narrow and extremely sharp bend the channel reaches a depth of 135 feet, or more than the elevation of the surface of the stream above gulf level at this point.

Chart No.	Maximum Elevation of Channel Bottom above Gulf Level[4]	Minimum Elevation of Channel Bottom above Gulf Level[4]	Location	Miles from Gulf (Cairo = 1072)
55	0		1 mile below Lake St. John Landing	*388*
		—89	1 mile below Giles Landing	374
54	— 5		7 miles below Coles Creek Landing	393
		—61	2 miles below Coles Creek Landing	398
53	+10		3 miles below Buena Vista Landing	409
		—55	6 miles above Buena Vista Landing	418
52	+10		2 miles above St. Joseph	425
		—60	1 mile below St. Joseph	422
51	+37		1 mile below Grand Gulf Landing	435
		—33	10 miles above Grand Gulf Landing	446
50	+12		2 miles above New Town Landing	455
		—12	6 miles below New Town Landing	447
49	+30		2 miles above Warrentown	467
		—30	4 miles above Warrentown	469
48	+22		4 miles below Vicksburg	479
		—54	1 mile below Vicksburg	482
47	+33		5.5 miles below Milliken's Bend Landing	486
		—32	1 mile above Milliken's Bend Landing	492
46	+37		4 miles above Villa Vista Landing	503
		—26	At Villa Vista Landing	498
45	+44		7 miles below Arcadia Landing	505
		—21	4 miles below Arcadia Landing	508
44	+53		1 mile below Shepard Landing	525
		—10	1 mile above Shepard Landing	528
43	+61		6 miles above Nelson Point Landing	547
		— 6	0.5 mile above Nelson Point Landing	541
42	+51		0.5 mile above Carolina Landing	555
		—26	5 miles below Carolina Landing	550
41	+64		2.5 miles above Lake Washington Landing	*569*
		—29	4 miles below Lake Washington Landing	563

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[1] Colonel G. E. Church, "South America: An Outline of its Physical Geography," *Geog. Journ.*, Vol. 17, 1901, p. 382.

[2] Reported in a paper on the longitudinal section of the river delivered at the 1908 meeting of the British Association and noted in *Nature*, October 15, 1908, p. 617.

[3] Chamberlain and Salisbury, "Geology," Vol. I, p. 162.

[4] Elevations have been referred to sea level by computations based on the relation of the datum plane for each sheet to gulf level at Biloxi, Miss.