29, 1892. The eastward prolongation of the ancient bluffs is probably not continued in the line *yx*, but bending east about where the turn occurs in the courses of Lost Creek and Shell Creek. The former is a considerable stream so long as it has the impervious Cretaceous shales for a substratum, but soon disappears when it encounters the deep mass of silt in the Platte valley.

There is no evidence, so far as I know, that the Platte has ever shifted out of its old rock bed, except during the transient episode at Sand Creek. The existence of a gorge excavated in Mesozoic and Palæozoic rocks, once five hundred feet deep though now silted up to its brim, is the best reason for its present course. Nor can any inferences respecting the influence of rotation be drawn from the trend of this gorge, for the reason that a considerable part of it was formed by a stream which flowed *west*. When the Platte first stretched across the plains, its several parts of different ages and opposite flow being united in one great river, it found a ready-made channel, to which it has, in the main, steadily adhered. The hypothesis that it once flowed in the channel of the Loup fares badly in the light of the facts, and, looking across to the southward, we find no evidence that it ever flowed in any of the numerous heads of the Blue, as suggested by Professor Davis. None of them has any marked pre-eminence over the rest, and all of them are slight recent furrows, mostly below the level of the Platte, so that it must have shifted up-hill if it once flowed in them.

The suggestion that it once flowed in Prairie Creek falls into a different category, since this stream is within the old rock trough. But it is a mere pin scratch in a wide alluvial plain, any other line of which is just as likely as that to have been the flow-line of the Platte at some period. Of course this great river has shifted about within its rocky gorge. The most significant fact in respect to the influence of rotation is that it now, in many places, crowds upon the south bluffs, as shown in Fig. 2.

It is agreeable to have the concurrence of Professor Todd in my opinion that "the Loups did formerly flow through to the Platte.' I trust he will not recede from this harmonious attitude in consequence of finding it impossible to put the Platte over into the Loup in order to get them together. Strictly speaking, however, that is not impossible. A big canal would accomplish it literally. The real difficulty is to get the Platte back to its present higher channel. It is not now a constructive stream, building up its bed above the surrounding country, else we might suppose that it had shifted to its present position and then built it up above the Loup. It has not probably been a constructive river at any time since the Rocky Mountain uplift emptied Lake Cheyenne, and gave the Platte such a steep gradient that it is able to accomplish a little vertical erosion in spite of its great burden of sediment. It trembles on the verge between vertical erosion and deposition, the balance inclining to the former, but so slightly that it maintains its levels with great steadiness. Herein lies another reason for doubting that great changes of level have recently occurred in its valley.

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Sistrurus and Crotalophorus.

ON page XXVI. of the introduction to a work on North American Reptiles, in the "Memoirs of the Museum of Comparative Zoology," VIII., 1883, the name Sistrurus was applied to one of the two genera of rattlesnakes because Crotalophorus, the previous title, was a synonym for Crotalus, the other genus. Professor Cope, in his latest paper on the serpents, Proc. U. S. Mus., 1892, p. 624, objects to the change in these terms: "Mr. Garman has named this genus Sistrurus, on the ground that the name Crotalophorus was preoccupied at the time it was employed by Gray. This does not, however, seem to be the case. It is true that Linnæus uses it instead of Crotalus in the sixth edition of the Systema Naturæ (1748, p. 35), but the system of nomenclature thus adopted is not binomial, so that the names are not authoritative as against later ones." This makes a considerable display of lack of caution, to say the least of it. If use by Linné in the sixth edition of the Systema (as also in the seventh and the ninth editions, and the Amoenitates) was all that bore on the question there might be nothing to say. But in proposing the new name I had in mind more than appears from the citation. Linné and Gronow only were mentioned. The dates for the latter were 1756 and 1763, which brings us within the range of the tenth edition, 1758. Gronow might be put aside as unsound binomially. If so, I still had Houttuyn, 1764, who certainly regarded the names as synonymous, for he says, "De geslagtnaam deezer slangen, *Crotalophorus*, en by verkorting *Crotalus*, is afkomstig van den ratel, dien zy aan't end der staart hebben." But, again, if not allowed to go farther back than the twelfth edition, 1766, there was another authority for Crotalophorus instead of Crotalus, Vosmaer, 1768, according to whom, "De Heer Linnéus geeft de benaaming van *Crotalophorus* aan dit geslacht, in het welk hy drie onderscheidene soorten heeft opgeteekend, die hy *Horridus*, *Dryinas* en *Durissus* noemt."

Under the name Crotalophorus, 1748–68, neither Linné, Gronow, Houttuyn nor Vosmaer included any of the species of the genus defined by Gray, 1825, with the same name. That they were not binomial authorities may be urged against Linné and Gronow, but not against Houttuyn and Vosmaer, who, though they retained the earlier name, adopted the genus and the species from the tenth edition of the Systema. Linné dropped Crotalophorus for Crotalus in 1758. In 1766 he described the first species of the other genus, placing it in Crotalus, where it was kept by most authors until removed by Gray. The necessity of the change I have made in the name of Gray's genus is best shown by a concise view of the synonymy for the two genera.

Crotalus.

Caudisona Linn., 1735–47; Laur., 1768; Flem., 1822; Cope, 1861–71; Coues, 1875.

Crotalophorus Linn., 1748–56; Gronow, 1756–63; Houtt., 1764; Vosm., 1768.

Crotalius Linn., 1754.

Crotalus Linn., 1758–66; Daud., 1803; Merr., 1820; Gray, 1825–49; Fitz., 1826–43; Wagl., 1830; Holbr., 1842; Bd. and Gir., 1853–59; Dum. Bibr., 1854; Cope, 1859, 1875–92; Garm., 1883. (Many omitted. In most cases, from 1766 till 1825, a species of Sistrurus was included.)

Crotalinus Raf., 1815.

Uropsophus Wagl., 1830; Gray, 1831–49; Fitz., 1843.

Urocrotalon Fitz., 1843.

Aploaspis Cope, 1866–75.

Aechmophrys Coues, 1875. (The last four apply to particular species.)

Sistrurus.

Crotalophorus Gray, 1825–31, 1849; Holbr., 1842; B. and G., 1853–59; Cope, 1859, 1886–92.

Caudisona Fitz., 1826–43; Wagl., 1830; Bon., 1831; Gray, 1842; Yarr., 1875; Cope, 1875–80.

Crotalus Flem., 1822; Cope, 1860; Coues, 1875.

Sistrurus Garm., 1883.

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"Scientific" Genealogy—Rejoinder, No. 2.

QUITE recently I contributed to these columns (*Science*, Vol. XIX., No. 476. "'Scientific' Genealogy—A Rejoinder."—Veritas.) a brief paper intended to curb some tendencies prevalent in genealogical circles, notably untenable assumptions regarding family traits and likenesses inherited.

Since the appearance of the above article several criticisms have been sent to this magazine — rather surprising to "Veritas" for the reason that they indicated a lack of acquaintance with what he opposed in the article.

General discussions of biology, breeding of animals — human and brute — are, I doubt not, of interest and profit, only, — they hardly touch my point in the argument, and it is important in open discussion to keep to the question, — so many readers mistake a rambling generalization for argument and fact. Then, too, I object to portions of the article by "Enquirer," namely, p. 155, paragraphs 1 and 4, as mistakenly quoting my views (for light on which my article is in evidence) and also to his last para-

graph, p. 155, in which, as I read it, he eludes and dodges the question.

More and more thought in the matter only convinces me in greater degree that these words of mine "The writer does not for a moment combat the well-exhibited inheritance of peculiar appearance and traits of a man from his father or mother, his grandparents or great-grandparents, or in rare cases from great-great-grandparents, but beyond these limits the historian has little to encourage him in his attempt beyond uncertain and traditionary tales" (Rejoinder, p. 157) are safely within the truth.

Considering that "Enquirer" knows relatively nothing of $99\frac{61}{100}$ per cent of his emigrant ancestors, I still frankly disbelieve that he can locate traits or characteristics of John Doe the first, in any living descendant, with truth. However dear a hobby or theory may grow to a man, unless facts fully substantiate the theory, and it be capable of proof, it is questionable honesty and mistaken wisdom to give that theory currency as if it were fact.

As far as I can group and draw inferences from the facts, on an average the maternal blood has almost, if not full as much, influence in determining the traits and appearance of offspring as the paternal,— this with reference to human beings.

With some one hundred living descendants of a man (the man and descendants included in four generations) I have had intimate acquaintance, and neither in those bearing his surname, nor the males by themselves, nor in all together, does there appear one common trait or characteristic, which state of things I consider due to the great influence of new strains of blood brought in by marriage.

Being as yet too young, personally, to claim the experience necessary to theorize concerning likenesses, I feel that my only safety is in stating fact. I have made a specialty of gathering the likenesses of my ancestors and close relations, and from oil paintings, through silhouettes, daguerreotypes, and ambrotypes to photographs, I honestly see as much in appearance derived from the maternal blood as from the paternal. Photographs are of too recent origin, however, to affect the argument I put forward.

Could those who are interested in the matter alter their point of view long enough to realize the blending, the existing cousinship, to realize that the living child of old New England parentage has relatives (sixth cousins and nearer) to easily populate Boston, Mass., and to spare, such a light will come to them as will widen, enlarge, and much more than offset the narrow views now cherished.

"VERITAS."

BOOK-REVIEWS.

Helen Keller: Souvenir of the First Summer Meeting of the American Association to Promote the Teaching of Speech to the Deaf. Second Edition. Washington, Volta Bureau. 1892. Large. 4°.

THE great interest aroused in the education of the blind and the deaf by the remarkable story of the life of Laura Bridgman is destined to be eclipsed by the most astounding educational strides of the twelve-year-old Helen Keller. Blind and deaf since her eighteenth month, she receives her first instruction in language at seven years, she learns in days what it required months for Laura Bridgman to acquire, and within a year has a fund of knowledge and a capacity for using it quite remarkable for an eight-year-old child in full possession of the five senses. Her interest in her surroundings, her retentive memory, and appreciative imagination, her capacity to learn and reproduce are wonderful enough, but they are outdone by her remarkably quick and, from all accounts, remarkably exact acquisition of vocal speech. By placing her hands upon the mouth, lips, and throat of the speaker, she learns the position of the speech-making organs when uttering the different sounds; setting her own vocal organs in the same position she reproduces the sound, correcting it according to the instructions (by the finger alphabet) of her teacher,—an acquisition difficult enough when guided by the eye, but certainly marvelous for one both blind and deaf.

It is only natural that her story should excite interest everywhere, and the present memoir of her education tells the salient points of her life. It is admirably prepared, and contains an excellent portrait and *facsimiles* of her very remarkable letters. It is to be hoped that all the details of her career will be carefully noted and that the present is only an introduction to a fuller and more complete account of Helen Keller. It is certainly proper that the sympathy in her case should be used to excite an interest in the education of the deaf and the blind, and the souvenir will aid in this meritorious work.

Bacteriological Diagnosis: Tabular Aids for Use in Practical Work. By JAMES EISENBERG, Ph.D., M.D., Vienna. Translated and augmented with the permission of the author from the second German edition, by NORVAL H. PIERCE, M.D., Surgeon to the Outdoor Department of Michael Reese Hospital; Assistant to Surgical Clinic, College of Physicians and Surgeons, Chicago, Ill. F. A. Davis & Co., Philadelphia and London. 1892.

THIS is, without exception, the worst translation that has ever fallen into our hands. Not only this, but it exhibits throughout an utter ignorance of bacteriology on the part of the translator. We cannot but express the greatest astonishment at the temerity shown by the translator in attempting the task, deficient as he evidently is not only in the knowledge of the German language but also in the subject treated. To set forth all the errors would be to write another book, so we will make but a few quotations to show that our condemnation is not too severe.

Beginning with the first page, we find in the preface "a bacteria" occurring twice instead of "a bacterium," and "bacteriæ" instead of "bacteria." In the index, Bacillus "sublilis" instead of "subtilis" is seen, which might be an oversight if it were not again misspelt at the head of the tabulated description (No. 14) which deals with this organism. We will pass over a vast number of comparatively small mistakes such as the translations "pretty" for "schön," "nourishing-ground" for "Nährboden," "faint" for "matt" (dull), "spirules" and "spirillæ" for "spirilla," "flagellæ" for "flagella," "color-glass" for "Blende" (diaphragm), "object-glass" for slide, "éprouvette" for test-tube, "whitish fimbria" for "weislichen Saum" ("whitish border" would be more the author's meaning), and "slim staves" or "staffs" for "schlanke Stäbchen" (we usually speak of "rods" when speaking of bacilli). Wherever microscopic measurements are given we find "m." (meters) instead of "μ." On pages 14, 15 and 57, minus signs are omitted from in front of temperatures ranging from —10° to —20° C., thus taking all meaning out of the translation.

Serious errors would be represented by such translations as these, taken at random: P. 17, where the growing out of the Bacillus subtilis from spores is described "Stäbchen sprossen senkrecht auf die Längsachse der Sporen aus," translated "Staves sprout in the direction of long axis of spores." P. 24, "Häufchen, die zu einer kernigen, brauner Masse mit abgerundeten Ecken zusammenfliessen," translated "heaps, which amalgamate into a seedy, brown mass." Same page, "Umfangreiche, schnelle Verflüssigung, vom ganzen Impfstich gleichmässig ausgehend; gelbliche Verfärbung," translated "Growth elaborate, yellow, and quickly liquefying. The growth spreads from the entire inoculation point." P. 53, "im Condensationswasser," translated "in the water expressed in desiccation." P. 57, "Im Darminhalt von frischen Choleraleichen und Stuhlentlerungen Cholerakranker," translated "In the intestinal canals of recently moribund cholera patients and from the fæces of the same." Same page, "Am Anfang des Stichkanals bildet sich ein kleiner Trichter, es tritt Verflüssigung längs des Impfstichs ein, an der Oberfläche entsteht luftblasenartige tiefe Eisenkung," translated "Liquefaction begins slowly, commencing at the entrance of the puncture around an inclosed air bubble." Same page again, "nach Unterbindung der Gallengänge," translated "after ligature of the intestine below the bile duct." On p. 63 one's astonishment is somewhat increased by finding "verschiedenartige Zeichnung" translated "indifferent pictures." "Wasserstoff" (hydrogen) translated "water" — "ohne Sauerstoffzuführ" as "without addition of acid." On p. 72, "Schnittpräparaten" (sections) translated "excised preparations." On p. 79, instead of "Rausch-