

Thomas Patrick Irving: "The Ultimate Source of the Spectrum."

GEORGE WASHINGTON UNIVERSITY

Harry Wilson Houghton: "The Effect of Cold Storage on Chicken Meat."

George Whitfield Stiles: "The Possibility of Shellfish Contamination from Sewage-polluted Waters."

UNIVERSITY OF ILLINOIS

Robert Stewart: "Quantitative Relationships of Carbon, Phosphorus and Nitrogen in Soils."

Ernest Shaw Reynolds: "Relations of Parasitic Fungi to their Host Plants."

UNIVERSITY OF MINNESOTA

Alois F. Kovarik: "The Effect of Changes in the Pressure and Temperature of a Gas upon the Velocity of the Negative Ions Produced by Ultra-violet Light."

William McDonald: "Agricultural Education."

UNIVERSITY OF NEBRASKA

Clarence Emerson: "The Relation of the Common Milk Streptococci to the Streptococcus Pyogenes."

Joseph Allen Warren: "Agricultural Geography of Nebraska."

LELAND STANFORD JUNIOR UNIVERSITY

John Pearce Mitchell: "The Normal Constituents of the Potable Waters of the San Francisco Peninsula."

Albert Christian Herre: "A Lichen Flora of the Santa Cruz Peninsula, California."

BOSTON UNIVERSITY

Guilielmus Henricus Watters: "The Opsonic Method of Treating Disease."

UNIVERSITY OF CINCINNATI

Robert E. C. Gowdy: "The Fatigue of Metals Subjected to the Roentgen Radiation."

UNIVERSITY OF NORTH CAROLINA

Stroud Jordan: "Condensation of Chloral with Primary Aromatic Amines."

NORTHWESTERN UNIVERSITY

Harold Stiles: "A Determination of Wave-length of the Arc and Spark Spectra of Mercury."

VANDERBILT UNIVERSITY

Allan Fulson Odell: "A Spectrographic Study by Means of a Grating (Replica) Spectroscope,

and the Determination of the Wave-lengths of the Arc Spectrum of Tantalum."

UNIVERSITY OF WISCONSIN

Willibald Weniger: "Infra-red Absorption Spectra."

DÜRER'S "CONTRIBUTION" TO GESNER'S NATURAL HISTORY

THE statement that Dürer "contributed" one or more drawings to Gesner's famous "Natural History" was called to my attention many years ago, when the error appeared to be sufficiently obvious, but not having the proper materials then in hand, it was not traced to its source.

Attention was again directed to the subject by a recent history of biology, in which it is stated that "his (Gesner's) friend supplied one of the originals—the drawing of the rhinoceros." Again in a delightful essay on Gesner, written some years ago by a revered teacher and friend, we are told that "the names of very few of the draughtsmen and engravers" of the "History" are known, but Gesner says that Lucas Schrön drew the birds, and that Albrecht Dürer made the cut of the rhinoceros.

This suggests that Dürer was not only the author of the engraving, but that he actually made it for Gesner's work, and this impression is confirmed when we read farther on of "His contemporary and friend, Dürer."

The truth of the matter is easily set forth. Albert Dürer made the original of the rhinoceros picture, but he did not "contribute" it to the "Historia Animalium," nor was he strictly a contemporary, or in any sense a friend of the author.

When Albrecht Dürer (1471-1528) died, a world-famous artist, Conrad Gesner (1516-1565) was a lad of twelve, and the "Historia Animalium" (1551-1558) did not begin to appear until nearly forty years after the engraving of the rhinoceros was made and published. Gesner simply borrowed this plate, and in accordance with his commendable custom, acknowledged it in a descriptive note or legend placed beside the cut. Dürer's name here appears for the first, and so far as I have

ascertained, for the only time, in the History. A hasty or imperfect reading of this legend undoubtedly led to the error. The legend freely translated reads as follows:

This is a picture by Albert Dürer, in which that illustrious painter (whose works on drawing still exist) depicts most admirably the Rhinoceros sent to Emmanuel, king of Portugal, at Lisbon, in the year of grace 1515, from the district of Cambay in India. I have lately seen a painting of a Rhinoceros, that is the Nose-horn, representing an animal of this kind, which was recently sent to the king of Portugal from India, and Augustus Justinianus has with certainty identified this very drawing which we here reproduce as a true likeness.¹

The meaning towards the close of the last sentence is rather obscure. What is literally said is: "Aug. Justinianus recognizes unquestionably this very likeness which we here give." Apparently Gesner intended to say that he had recently seen a painting (presumably from life) of the rhinoceros in question, or of one like it, and that Augustin Justinianus, who had probably seen the animal alive, vouched for Dürer's sketch as a true likeness. Dürer's fame as an artist was sufficient guaranty for the drawing as a work of art, but Gesner wished to make it clear that it was a good likeness and therefore of scientific value also. This is the best interpretation which we can give. The meaning could hardly be that this drawing of Dürer's was a good likeness of the painting referred to, for

¹For the benefit of any who may wish to consult the original, I give the text of the legend as it stands in the first edition of Gesner: "Pictura hæc Alberti Dureri est, qua clarissimus ille pictor (cuius etiam libri de pictura extant) Rhinocerotem Emmanueli Lusitaniae regi anno salutis 1515, à Cambaia Indiae regione Ulysbonam allatum, perpulchre expressit. Rhinocerotis, id est nari-cornis, nuper pictam vidimus imaginem, referentem ex hoc genere animal, quod per hæc tempora Lusitano regi ex India allatum est, Aug. Justinianus hanc ipsam indubiè, quam hic damus, imaginem intelligens." Conradi Gesneri medici Tigurini Historiae Animalium, Lib. I. de Quadrupedibus viviparis. ("De Rhinocrote," p. 952.) Tiguri apud Christ. Froschoverum. Anno M. D. L. I.

Gesner had seen both and would be as good a judge as any.

This was the first Indian rhinoceros (*R. unicornis*) to be seen alive in Europe since the days of the Roman amphitheatres, and it naturally created a great sensation. It was sent to Lisbon in 1513, and not in 1515, as stated by Gesner, and without doubt by one of those Portuguese generals who were then making important conquests in India. Possibly more than one of these animals was imported at about this time, the first of which is said to have demolished its cage while on the journey. Emmanuel is further reported to have sent a rhinoceros in the same year (1513) to Pope Leo X., and to have also matched one in a fight with an elephant, in which the latter was worsted.

"Aug. Justinianus," the now somewhat mysterious authority referred to by Gesner, was without doubt the Augustin of that name (1470-1536), at one time bishop of Nebbio in Corsica, and again professor in the University at Paris, a celebrated Oriental scholar, divine and writer of the period. He may have been a friend of Gesner, and at all events had evidently seen the animal referred to alive.

Several artists may have tried their skill in delineating this novel animal, and one at least in the capacity of friend or admirer sent Dürer a description of the beast and enclosed a sketch of it. From these data, and not from a description alone, as has been often asserted, Dürer composed his now famous drawing, which was engraved on wood and first published in 1515. Dürer's original drawing is preserved in the British Museum, and bears on its lower margin, in the artist's own hand, a note, which in translation reads as follows:²

Item in the year 1513, on May 1, they brought our King of Portugal at Lisbon such a beast

²In addition to assistance received from various friends in the elucidation of certain questions, I desire to specially acknowledge the courtesy of Mr. J. L. Farnum, of the Library of Congress, for supplying the translation of the Dürer inscription and other interesting notes pertaining to this subject.

alive from India, which they call a Rhinoceros. For the wonder's sake I have had to send you a likeness of it. It has a color like a tortoise and is covered nearly all over with thick scales, and in size is like the elephant but lower, and is the elephant's mortal enemy. It has in front on its nose a strong sharp horn, and when the beast comes at the elephant to fight him it has always first whetted its horn sharp against the stones, and runs at the elephant with its head between his forelegs, and rips him up where he has the skin thinnest and so kills him. The elephant is very badly afraid of the rhinoceros, for it kills the elephant whenever it comes at him, for it is so well armed, and very lively and active. This beast is called "Rhinoceros" in Greek and Latin, but in Indian, "Ganda."

In writing this inscription Dürer simply copied the most pertinent extracts from the letter of his correspondent at Lisbon. The original, like so many of Dürer's letters, was probably destroyed, for nothing of it appears in Thausing's work on the artist's literary remains.³

According to Hausmann five different editions of Dürer's cut of the rhinoceros appeared, distinguished by varying German text, besides those in other languages. The Library of Congress possesses an impression of the seventh edition with inscription in Flemish, and a reproduction of the first German edition. The translation of this German edition follows closely that on the original drawing, omitting only the last sentence, in which the names of the animal are given. The Flemish inscription also follows the German of the drawing and of the woodcut, with the exception of the following statement:

This Rhinoceros mentioned above was sent by the King to Germany, to the Emperor Maximilian, and was drawn from life by the renowned Albrecht Dürer, as here represented.

Both of these statements are erroneous, and are curiously contradicted by Dürer's own note to which they are appended.

The remark that this animal was sent to the Emperor of Germany has been repeated by other writers, but is refuted "by the unani-

³"Dürers Briefe, Tagebücher und Reime," Moriz Thausing, Wien, 1872.

mous testimony of the Portuguese historians, Barros, Correa and Albuquerque the Younger, who stated that Manuel sent the creature, on account of its rarity, to the Pope (Leo X.), but that it perished by shipwreck before reaching Rome." Heller in his life of Dürer also discredits the statement, since no mention of the fact is made either in the German inscription, quoted above, or in the life of Maximilian.

Gesner must have read the printed inscription on Dürer's original engraving, of which he made use, but he either did not have it at hand, or used a trimmed copy when writing the note for his History, for he misdates it, and gives additions from other sources.

It must be admitted that Dürer's interesting engraving is a poor likeness of the subject, being faulty in proportion, in the shape and pose of the head, as well as in the remarkable tattooing or ornamentation of the skin. For this, however, the great artist and lover of animals is not to be blamed. Buffon, who gives an account of all the early pictures of this animal, remarks that no really accurate drawings or descriptions of this species existed prior to the publication of a "Natural History of the Rhinoceros" by Dr. Parsons in 1743. The animals which this careful naturalist studied were sent to London in 1739 and 1741, the former coming from Bengal. Buffon considered Dürer's drawing one of the poorest, and remarks upon the most ancient pictures of "nose-horn" extant as follows:

Those indeed which we see on the ancient pavements of Praeneste and on the medals of Domitian are extremely imperfect; but at least they are without the imaginary ornaments of that of Albert Dürer.

Dürer was without any doubt an enthusiast on natural history, and it is to be noted that he made a hurried, and as it proved, fatal journey to Zealand to sketch a stranded whale. His engravings were widely disseminated, and while good impressions of the subjects have become exceedingly rare and valuable, that of the rhinoceros does not seem to have been greatly sought after by collectors. The original plate is large, measuring within lines

11 $\frac{3}{4}$ × 8 $\frac{1}{4}$ inches; in the upper right corner is fixed the word "rhinocerus," between the date "1515," and the well known bold monogram of the artist; there is a scant foreground, and the detailed inscription was added outside the enclosing lines. The impression which the present writer has before him is printed on thin linen paper bearing the water-mark of the peacock, well known to dealers and collectors, and is trimmed to the lines, according to the pernicious custom of an earlier time.

Gesner properly used this print, which must have been common in his day, duly acknowledged it, and added a brief history of the subject for the interest of the general reader. The reproduction, possibly by Gesner's own hand, is almost photographic in accuracy, excepting the accessories of enclosing lines and foreground, which were studiously omitted from nearly all of his illustrations. It was reduced by about one fourth, and was naturally reversed in printing. Although Gesner might have advantageously drawn still further from the great Neurenburg artist for admirable pictures of horses, dogs, stags and hares, he refrained.

FRANCIS H. HERRICK

THE UNITED STATES BUREAU OF
EDUCATION

THE Bureau of Education at Washington, which has occupied for thirty-seven of the forty-two years of its existence the rented building at the corner of Eighth and G streets, northwest, was removed in July to the second floor of the old Post-office Department building between Seventh and Eighth and E and F streets, with storage and mailing rooms in the basement. Its new quarters are more commodious and much more comfortable than the old. This is the first time in the history of the bureau that it has been quartered in a government building.

A measure of reorganization in the staff of the bureau was made during the month of July. Mr. Lewis A. Kalbach, who has been connected with the bureau for twenty-two years and has served during the past three years as clerk to the Commissioner, in addition

to his duties as specialist in land-grant college statistics, has been appointed chief clerk of the bureau. He has been succeeded as specialist in land-grant college statistics by Professor James E. McClintock, of the University of Maine, whose principal work will have to do with the relations of the federal government with the land-grant colleges of agriculture and mechanic arts. The former chief clerk, Mr. Lovick Pierce, continues his connection with the bureau as chief of the correspondence division. Dr. Harlan Updegraff, who has served as chief of the Alaska division during the past two years, has been appointed collector and compiler of statistics, succeeding Mr. W. Dawson Johnston, who has been made librarian of Columbia University. Dr. Updegraff's principal duties will have to do with the relations of the bureau with the chief school officers of the several states and cities of the country. It is expected that he will serve as an adviser in matters affecting school administration.

Mr. William T. Lopp, who has served as district superintendent of schools in Alaska, has been appointed superintendent of education of natives of Alaska and will have direct charge, under the supervision of the commissioner of education, of education and the reindeer industry among the Alaskan natives. He will divide his time between Alaska and Washington and will have charge of the Alaska division of the bureau.

Some time will be taken in closing up the special work upon which Dr. Updegraff and Mr. Lopp are now engaged, in the Alaska service, and it is expected that they will not enter their new duties before November or December.

Arrangements have been made by the Bureau of Education and the Bureau of the Census for the collection by special census agents of financial statistics of the school systems of the larger cities. The statistical form used by the Census Office will be furnished shortly by the Bureau of Education to a number of these cities that can not be reached this year by the census agents. This form is the outcome of a conference between the two offices concerned.