interesting details of these are given in the observer's journals. The storms only occur when the air is moist; the most favorable condition is during the time a light, soft snow is falling. When the hands are held up, sparks emanate from the tips of the fingers. At such times, with considerable wind, the anemometer-cups look like a circle of fire. Each flake of snow, as it alights on a mule's or burro's back, gives a spark like a firebug. The station was once struck by lightning. The electricity came down the anemometer-rod, following along the wire running to the battery. Every place the wire crossed a nail, the head of the nail was fused, and the wire melted at the same point.

In addition to the regular meteorological observations on the summit of Pike's Peak which appear in the "Annals," other special observations have been made.

HEALTH MATTERS.

Contagious Pneumonia.

DR. F. MOSLER, in a paper read before the Greifswald Medical Society, gives details of a series of cases of acute pneumonia in a family where there seemed every reason for believing that contagion was the cause of the spread of the disease. The patients, says the *Lancet* of Jan. 25, 1890, were all attacked during the last fortnight of January, 1889; the first to fall ill being the father, who died on Jan. 22, the fifth day of his illness. On this day his wife was attacked, and she too succumbed on the fifth day of the disease. While she was ill, her son, who constantly visited his parents during their illness, himself was attacked on the 26th. He was thirty years of age, strong and temperate, but succumbed on the twelfth day of the attack. Further, his sister, who had come from Arendsee, near Stralsund, to be with her sick parents, and who staid in their house from Jan. 22 to Jan. 26, was attacked at Arendsee on Jan. 29, and was admitted into the Greifswald Hospital. She alone recovered.

Dr. Mosler points out that the parents' house was dry, the two rooms they inhabited were well ventilated and clean, and that there had been no illnesses in the house within the past five years. He thinks the father must have acquired his pneumonia outside, and that the disease was communicated in turn to the members of his family by contagion through the sputa. In the case of the son, a *post-mortem* examination showed that the form of pneumonia was not the typical one: it was more lobular, was accompanied by a hemorrhagic pleurisy and by swelling of the spleen. Moreover, an examination by Professor Grawitz of some of the fluid withdrawn from the lung of the daughter during the height of the disease resulted in the discovery of bacilli resembling those of rabbit septicæmia, but neither the pneumono-bacillus of Friedländer nor the pneumono-coccus of Fränkel was found. In the case of the son, the blood from the heart yielded a similar micro-organism. Dr. Mosler thinks that such facts, as well as the peculiarities of the morbid anatomy of the latter case, suggest the occurrence of a special form of pulmonary inflammation, owning a cause different from that of the ordinary form. He sees in such cases a reason for believing that many varieties of poison may give rise to pneumonia. But the main lesson from the cases is that of contagiousness, and the need for the careful disposal and disinfection of the sputa, which he believes to have been the infective medium in these cases. He refers to recent contributions of Finkler and Cantani on infectivity of pneumonia, the latter recording some striking instances where the disease was more of the lobular than the lobar type.

MOUTH-BREATHING AND THE TEETH. — Dr. Scanes Spicer read a paper at the last meeting of the Odontological Society of London, upon "Nasal Obstruction and Mouth-Breathing as Factors in the Etiology of Disorders of the Teeth." In the course of his remarks, as we learn from the *Lancet* of Jan. 8, he said he had been struck with the frequency with which carious teeth were associated with obstruction of the pharynx and enlarged tonsils; so much so, that he had made it a routine practice to examine the teeth in all cases of nasal obstruction, and he believed that there existed a relation between them; and he further is of opinion that there is a generic relation between some cases of vaulted arch, narrow jaws, and irregular teeth, and nasal obstruction. Normally we should breathe through the nose, so as to warm and filter the air respired. All animals, savage races, and young infants do so; but a large number of adults of civilized nations breathe through the mouth, because they have some obstruction of the nasal passages, — erectile tumors, permanent catarrhal affections, polypi, post-nasal adenoid growths, etc. Mouth-breathing, he said, as a predisposing cause of caries of the teeth, came into action in various ways. The teeth were exposed to a current of air of a much lower temperature than that of the body, which would tend to cause inflammation of the periosteum and pulp of a tooth; the cold, dry air produced congestion of the mucous membrane, with a secretion of stringy acid mucus; and the rapid evaporation of water which takes place when the mouth is constantly open inspissated this mucus, which so formed a fertile soil for the development of micro-organisms. Again: when sleeping with the mouth open, the tongue falls back, and the parotid secretion finds its way directly through the pharynx instead of bathing and washing the teeth. With reference to the so-called V-shaped maxilla, Dr. Spicer thought that many cases might be traced to mouth-breathing, the muscles of the cheek pressing unduly upon the soft alveoli when the mouth is open.

SCRATCHING THE BACK FOR INTERMITTENT FEVER. — Dr. Alois Fénykövy communicates to a Vienna medical journal an account of some observations made on the treatment of intermittent fever by means of friction of the back along the spine. Many years ago, as stated in the *Lancet*, while at Nisch with his regiment, there occurred so many cases of intermittent fever that the stock of quinine was becoming exhausted, and, in order that the patients might not be entirely without some sort of treatment, it was ordered that they should be rubbed twice a day along the spine with simple ointment. The day after this order had been given it appeared that the usual attack had not come on. Accordingly since that time Dr. Fénykövy has very frequently employed this treatment, and usually with marked success. Indeed, he says that three-fourths of his cases have done very well without any quinine at all.

NOTES AND NEWS.

THE English Royal Meteorological Society have arranged to hold at 25 Great George Street, Westminster, on March 18 to 21 next, an exhibition of instruments and photographs illustrating the application of photography to meteorology.

— Herr Trautweiler thinks that a railway should go to the top of the Jungfrau, and in the *Schweizerische Bauzeitung* gives a brief account of his scheme. The railway would go from the valley below to the summit, and would be almost entirely under ground. There would be several intermediate stations, from which convenient, well-arranged tunnels would lead to points on the mountain whence the best views are to be had. If stormy weather came on, the passengers could withdraw into the shelter of those tunnels. The railway would be lighted by electricity.

— The Thomson-Houston Electric Company of Boston are building several large electric motors, or electric locomotives, for a street-railway company in that city. Each locomotive will be powerful enough to draw a train of cars.

— The Russian Government, it is stated, has announced its intention to begin operations soon on the great railway across Siberia. Work will begin at Vladivostok and at the present eastern terminus of the Russian railway system at the same time. The total length of the line is to be 4,375 miles.

— The Jull snow-excavator, illustrated and described in these columns some months ago, received several severe tests during the recent snow blockades on Western railroads. On Feb. 3 it opened up a blockade on a road between Pendleton, Ore., and

Walla Walla, Wash., where the snow was from ten to fifteen feet deep, and solidly compacted by rain and thaws. The track was cleared in a few hours.

— In the current number of the *Journal of the Anthropological Institute* there is a valuable paper, by Dr. Arthur Thomson, on the Veddahs of Ceylon. Discussing the affinities of the Veddahs, he says there appears to be little doubt, that, if they be not of the same stock as the so-called aborigines of southern India, they at least present very strong points of resemblance as regards stature, proportions of limbs, cranial capacity, and form of skull. The similarities of hair and color between these races, according to *Nature*, have often been remarked; so that, on the whole, if physical features alone be taken into account, Dr. Thomson thinks the affinities of the Veddahs with the hill tribes of the Nilgherries and the natives of the Coromandel coast and the country near Cape Comorin, are fairly well proved.

— According to the *Perseveranza* of Milan, quoted in the current number of the English *Board of Trade Journal*, important sponge-banks have lately been discovered close to the island of Lampedusa, on the southern coast of Sicily. These deposits of sponges extend for over a surface of from fifteen to eighteen marine leagues, and are situated about an equal distance from the south-eastern extremity of the island. The smallest depth above these banks is twenty ells; the greatest depth is from thirty to thirty-one ells. At the lesser depths rock is met with, on which the sponge grows; at greater depths a sandy soil is found. All varieties of sponge are discovered here, including those which are in the greatest commercial request, and they are easy to obtain. Greek and Italian vessels have already (January) proceeded to Lampedusa to take advantage of this discovery.

— One of the most interesting applications of the electric light yet made is to the passage of the Suez Canal at night-time. This great waterway, which is so important to all European nations, and particularly to England, ran the risk of being choked by the continued development of the traffic through it in the years 1882 to 1885. At the end of this period, however, the Canal Company determined to light the channel at night-time, so that the passage could be made without danger, and hoped in this way to sensibly diminish the traffic on the canal during the day, and to render the state of affairs less annoying to shipowners, until the enlargements now in progress could be completed. The company accordingly installed a complete system of beacons along the banks of the canal, supplemented by luminous buoys burning Pintsch gas on the water, and in this way the channel was clearly marked out. It was soon seen, however, that this alone would be insufficient to insure safety in night passages, and it was therefore decided, says *Engineering* of Jan. 31, that every vessel moving along the canal at night must itself be supplied with arrangements for working a set of electric lamps on board. Rules were accordingly drawn up, which provide that these lamps shall be four in number, one of which is to be a powerful light at the bow, inside of a projector lamp capable of throwing the beam to a distance of not less than 4,000 feet in front of the vessel. The other lights are placed, one at the stern, and one on each side of the boat. The first vessel to make the passage under these regulations was the Peninsular and Oriental steamship "Carthage," in 1886, the transit lasting eighteen hours; but, with the improvements recently effected, the time has now been reduced to sixteen hours for large vessels. The Mangin projector is that principally employed, both war-vessels and vessels belonging to the great mail companies being fitted with this apparatus. Smaller companies usually employ a portable apparatus, which they find ready for hire on their entering the canal, and which they unship again on reaching Port Said or Suez. These sets of apparatus include the projector, a dynamo, and a motor, and certain firms make a specialty of the business of hiring them out. The great companies generally employ a similar apparatus, but are themselves the owners of the plant. The night traffic on the canal has increased very rapidly since it was started. Thus in 1887 there were, in all, 371 night transits made; but in 1889 this number had increased to 2,454 out of a total of 3,420, or upwards of 71 per cent of the vessels passing through the canal; and four-fifths of the total tonnage used the electric light to assist them. At the same time the average duration of the passage has been reduced upwards of 40 per cent. Putting these facts into another shape, it appears that the effect of the electric light as applied at Suez has been the same as if the canal had been increased from 22 metres, its present width at the bottom, to 32 metres,—an operation which would cost at least $20,000,000.

— The National Home-Reading Union, London, Eng., has been formed for the purpose of developing a taste for recreative and instructive reading among all classes of the community, and directing home study to definite ends, so as on the one hand to check the spread of pernicious literature among the young, and on the other to remedy the waste of energy and lack of purpose so often found among those who have time and opportunity for a considerable amount of reading. Its objects are (1) to draw up and publish courses of reading adapted to the tastes and requirements of different classes of readers, especially (*a*) young people, (*b*) artisans, (*c*) general readers; (2) to publish for each class of readers a cheap monthly magazine, giving introductions to the prescribed books, answers to questions, and other helps (the readers will be organized, as far as possible, into local circles under suitable leaders, certificates will be issued to those who have completed regular courses of study, and such further assistance as experience shows to be practicable will be rendered); (3) to organize summer assemblies at convenient centres, when lectures will be delivered by experienced teachers, social gatherings held, and excursions arranged. The first reading season commenced on Oct. 1 last, and the union now numbers 5,500 members. It publishes a monthly journal in three sections, printed at the University Press, Cambridge, Eng.: (*a*) "The General Reader's Magazine," which contains chapters on literature (English and general), nature (organic and inorganic), history (English and general), and political science; (*b*) "The Artisan's Section" of the monthly journal; (*c*) "The Young People's Section" of the monthly journal. These all give directions for the reading and study of the prescribed books, abstracts of these books in most cases, and questions on them to be answered after reading. The union bids fair to be a great elevating and civilizing agency, and its very rapid extension and success have already outstepped the most sanguine expectations of its promoters.

— The subject of spelling-reform is occupying a great deal of attention in France. M. Mich. Bréal wrote a very exhaustive article on it in a recent number of the *Revue des Deux-Mondes*, and M. T. Carré has a reply to it in the January number of the *Revue Pédagogique*. After discussing the merits and demerits of the proposals of the thoroughgoing phonetic school, which he characterizes as too sweeping, he passes on to spelling on an etymological basis, and points out the hopeless contradictions of the present system viewed from the point of etymology: *imbécile* with one, and *imbécillité* with two *l*'s; *chariot* and *charrue*, *charrette; philosophie* and *fantôme*, *fantaisie*, etc., parallel examples of which can be found, and have often been pointed out, by the English spelling-reformers. He then enumerates the reforms which he considers moderate and within the bounds of practicability: 1. To bring the spelling of the conjugated forms of the verbs in *eler* and *eter* under one and the same rule, and to cease writing *je chancelle* by the side of *je modèle*. 2. To do away with useless exceptions, as in the seven nouns in *ou* that take *x* instead of *s* in the plural. 3. To suppress useless double vowels and consonants; to write *honeur* as well as *honorer; abatre*, *acabler*, *apeler*, *aporter*, *atraper*, where only one consonant is pronounced; but to continue to write *appétence*, *acclamer*, *annuité*, *innovation*, *immortalité*, etc., where the double consonant is heard. He gives on this point an experience he had at the inspection of a girls' school. He had expressed his surprise to the head mistress at finding some of the eldest pupils copy out from a dictionary lists of words commencing with *ab* and *ac*. "These pupils," replied the head mistress, "have an examination to pass. They must know how to spell *académie* and *accabler*. *apercevoir* and *apparaître*, *alinenter* and *allaiter*, *agrandir* and *aggraver*, etc. If I trust to their getting up the spelling of such

words from the haphazard way in which they occur in dictation and reading lessons, they will never learn them all, and those they do learn must be pointed out to them specially at a great loss of time during these lessons. I thought this plan of exercises better. I own it to be unintelligent, yea, absurd; but it answers its purpose.'' The inspector confesses that at this reply he was gravelled. 4. To suppress as much as possible all exceptions, and bring them under general rules. We should soon get accustomed to *châteaus*, *chevaus*, *cieus*, in which words the *x* is due to a grammatical error. Why write *ails* in botany, and *aulx* in cookery? Why not write *des livres hébreus* as we write *des habits bleus?* Why not give the birthright to *agenda*, *exeat*, *errata*, *quatuor*, and write them with an *s* in the plural? We write *porte-plume* because a holder holds only one pen, but *porte-cigares* because it holds more than one cigar. This is hair-splitting. On this principle, are we to write *des villageois en casquette*, or *en casquettes; du sirop de groseille*, or *de groseilles; des oiseaux qui voltigent de fleur en fleur*, or *de fleurs en fleurs?* 5. In the case of compounds that are of constant use, to suppress the hyphen: to write *porteplume*, *portemonnaie*, as well as *porte faix*, *portefeuille*. On the five preceding points, as well as on the following, M. Carré is at one with M. Bréal. 6. To simplify the rules of the past participle. At present we write, *la maison que j'ai vu construire*, and *la maison que j'ai vue tomber;* but the syntax is the same in both cases. The real object of *vu* is the infinitive with which it forms one phrase, one idea. In the second case, as in the first, it is not *the house that I have seen*, it is *la maison qui tombait:* what I saw is *the house that fell, the falling house.*

— The bound volumes added to the library, Kansas Historical Society, Topeka, Kan., in the past year, numbered 1,269; unbound volumes and pamphlets, 2,248; volumes of newspapers and periodicals, 1,053; single newspapers and newspaper cuttings containing special historical matter, 5,707; maps, atlases, etc., 53; manuscripts, 219; pictures and other works of art, 367; scrip, currency, and coin, 8; war and other relics, 224; miscellaneous contributions, 99. The library accessions during the past year have somewhat exceeded in number the average of former years. They have been of the same general character. The purchases have been chiefly confined to works more or less directly pertaining to Kansas. The additions to the number of volumes of newspapers and periodicals exceed that of any year except one since the organization of this society. This year's experience has brought additional proof of the great value of this department. There are now 9,034 volumes of this class. Of these, 6,613 volumes are files of Kansas newspapers. These represent every county and considerable town in the State. These files are consulted by the people of all classes, — by teachers, students, and local historians and writers; for information as to the early settlements, the organization of societies, churches, and schools; for the proceedings of political conventions and all public gatherings; for the records of public men; and for official and legal notices. In these days historical writers seek for original information as to the early beginnings and the every-day progress of the social life of the people; and they have come to learn that it is in the columns of the daily and weekly newspaper that this information has been most fully recorded, and that nowhere else is exact data to be found. Teachers and students in our educational institutions are more and more learning that the study of the history and development of their own State and locality are worthy of their attention. No little of the correspondence of the secretary is employed in giving information sought by students, teachers, and other inquirers for such local information.

— In one of the lectures delivered at Aberdeen. in January, under the Gifford bequest, Dr. E. B. Tylor, says *Nature*, offered a most interesting suggestion as to the meaning of a well-known but puzzling Assyrian sculptured group. This group consists of two four-winged figures, with bodies of men and heads of eagles, standing opposite a tree-like formation, which is easily recognized as a collection of date-palms, or a conventionalized representation of a palm-grove. Each of the two figures carries in the left hand a bucket or basket; in the right, a body which each seems to be presenting to the palm-tree. What is this body? It is usually described as a fir-cone; but some have regarded it as a bunch of grapes, others as a pine-apple. Dr. Tylor suggests that it should be connected with the most obvious point of interest for which the date-palm has been famous among naturalists since antiquity; namely, its need of artificial fertilization in order to produce a crop of edible dates. This process in its simplest form consists in shaking the pollen from the inflorescence of the male date-palm over the inflorescence of the female. The practice is mentioned by Theophrastus and Pliny, and in modern times in such works as Shaw's ''Travels in Barbary.'' Dr. Tylor exhibited a drawing of the male palm inflorescence, and said it was hardly necessary to point out the resemblance to the object in the hand of the winged figure of the Assyrian sculpture. As the cultivator of the palm-tree has to ascend the tree in order to perform the process of fertilization, he of course takes with him a supply of fresh flowers in a basket. Dr. Tylor's theory, therefore, is that the objects carried by the winged genii of the Assyrians are the male inflorescence of the date-palm in one hand, the basket with a fresh supply of inflorescence in the other, and that the function the genii are depicted in the sculptures as discharging is that of fertilizing the palm-groves of the country, — a function which must have been held to denote their great beneficence, since it showed them fulfilling the great duty of providing the Assyrians with bread.

— The following, published in *Nature* of Jan. 30, is translated from a notice published by the authorities of the Madrid Observatory: ''D. Ernesto Caballero, professor of physics, and director of the electric-lighting manufactory in Pontevedra, writes to this observatory, giving details of a remarkable meteorological phenomenon which appeared at 9.15 P.M. on Jan. 2. In a sky serene and clear, there appeared suddenly a globe or ball of fire of the apparent size of an orange, which, after falling (it is not possible to well indicate how or from whence) upon the conducting wires stretched across the city, entered the manufactory (referred to) by a skylight or window, struck the apparatus for distributing the light, from which (after raising the armature of a magnetic current closer) it struck the dynamo at work. In the presence of the alarmed engineer and workmen present, it rebounded twice from the dynamo to the conductor, and from the conductor to the dynamo, then fell, and burst with a sharp and clear detonation into a multitude of fragments, without producing any harm or leaving any trace of its mysterious existence. In various parts of the city the lights swiftly oscillated and were extinguished for some seconds; and that the darkness was not general and long-continued, was owing to the admirable self-possession of the employees, who almost instantly established the order of things, so suddenly and strangely interrupted by this mysterious meteor, of whose action and presence there only remained traces on the melted (or soldered) edges of the thick copper plates belonging to the armature of the circuit-closer. Outside the building, and at the moment of falling upon the conducting wires, it was seen by (among others) the professor of natural history, Señor Garcéran; and, from various effects observed on the wires during the following day, there were undoubted manifestations (in no other way explicable) of its electrical origin.''

— An interesting paper is contributed by Professor Carnelley to the *Philosophical Magazine* for January, in which he attempts to express the periodic law of the chemical elements by means of an algebraic formula. For reasons which are given in detail in the memoir, an expression of the form $A = c\ (m + \sqrt{v})$ is adopted, where A represents the atomic weight of the element, c a constant, m a member of a series in arithmetical progression, depending upon the horizontal series in the periodic table to which the element belongs, and v the maximum valency or the number of the vertical group of which the element is a member. From a number of approximations, as we learn from *Nature* of Jan. 30, Professor Carnelley finds that m is best represented by the value 0 in the lithium-beryllium-boron, etc., horizontal row; by $2\frac{1}{2}$ in the sodium series; 5 in the potassium series; and $8\frac{1}{2}$,

12, 15½, 19, 22½, etc., in the subsequent rows. Thus m is a member of an arithmetical series of which the common difference is 2½ for the first three members, and 3½ for all the rest. On calculating the values of the constant c from the equation $c = \frac{A}{m + \sqrt{v}}$ for 55 of the elements, the numbers are all found to lie between 6.0 and 7.2, with a mean value of 6.6. In by far the majority of cases the value is much closer to the mean 6 6 than is represented by the two extreme limits: thus in 35 cases the values lie between 6.45 and 6.75. If the number 6.6, therefore, is adopted as the value of c, and the atomic weights of the elements are then calculated from the formula $A = 6\,6\ (m + \sqrt{v})$, the calculated atomic weights thus obtained approximate much more closely to the experimental atomic weights than do the numbers derived from an application of the atomic heat approximation of Dulong and Petit. The number 6.6 at once strikes one as being remarkably near to the celebrated 6.4 of Dulong and Petit, and Professor Carnelley draws the conclusion that there must be a connection between the two. This assumption appears to be supported by the following interesting facts. If we assume c to represent the atomic heat, then atomic weight = atomic heat $\times$ $(m + \sqrt{v})$ = atomic weight $\times$ specific heat $\times$ $(m + \sqrt{v})$; or specific heat = $\frac{1}{m + \sqrt{v}}$. On calculating the specific heats of the elements from this equation, they are found to agree remarkably well with the experimental values, except in those cases in which the observed specific heat is known to be abnormal. Again, Bettone has shown that the hardness of the elements is inversely proportional to their specific volumes. If this be so, hardness = $\frac{\text{specific gravity}}{6.6\ (m + \sqrt{v})}$; and, on calculating the hardness from this formula, the numbers are again found to agree very closely with the hardness experimentally determined by Bettone. That the periodic law may therefore be approximately expressed by a formula of the type $A = c\ (m + \sqrt{v})$ appears very probable, and that the number 6.6 is a very close approximation to the value of c appears also to be established. Moreover, the fact that m in the even series represents a whole number, while in the odd series it represents a whole number and a half, corresponds to the well-known difference in chemical properties between the members of these series; and the assumption that the common difference between the first three values of m is only 2½, while between all the rest it is 3½, is borne out by Mendeleeff's statement that the elements of the lithium and sodium rows are more or less exceptional in their nature, and not strictly comparable with the subsequent series.

—The demand for fibre-machinery, so extensive of late years in Mexico, is likely to be increased under more favorable fiscal circumstances by the development on a large scale of the sisal hemp industry of the Bahamas. Last year Sir Ambrose Shea, governor of these islands, which are a natural continuation of Florida, wrote to the *London Times* a powerful appeal that British capitalists should undertake the cultivation in the Bahamas of this rival to manila hemp. The demand for the latter long ago outstripped the supply; and, to make good the deficiency, fibre has been sought for in all parts of the world. The most successful substitute of all, we learn from *Engineering* of Jan. 31, has been sisal, a wild hemp-plant indigenous to Central America and the West Indies. Thanks to the prompt enterprise of Americans, the trade soon began to flourish in Yucatan, where large tracts of waste lands are covered with sisal hemp. Experience, however, soon revealed that only carefully selected plants, properly cultivated, could produce fibre that would stand the tests applied to good manila. It was found, moreover, that the plant was stronger and more fibrous in the Bahamas than in Mexico; and the result was, that in order to render these islands the counterpart of the Manilas in prosperity, if possible, the authorities decided to grant an export bounty of £4 13s. 4d. per ton on all sisal hemp grown in the Bahamas. The effect of this encouragement has been to draw English capital to the islands, where arrangments are now being made to plant ten thousand acres with this useful plant. Sisal is like an aloe in appearance, and has leaves about six feet long. It grows wild on the poorest soils, sprouting freely from a sucker, and in three years the leaves are ready for plucking. For nearly twenty years it continues to furnish, season after season, crops of these leaves, which are gathered by coolies, placed in fibre-machines, and are baled ready for export within a few hours of being plucked. Excessive drought or rain having no effect on the plant, and no attention beyond pruning being needed after the first year or two, the crop is inexpensive to manage, and practically permanent for twenty years, when the old plants are replaced by young ones. If the energetic encouragement of the governor, and the liberal bounty granted, cause the cultivation of the plant to be conducted on a large scale, a fresh lease of prosperity will be conferred upon the Bahamas, and the machinery trade, as well as the fibre one, will benefit by the new West Indian industry.

— From a desire to verify his own researches as to the causes of failing nutrition in aged organisms, Mr. C. A. Stevens offers three cash prizes of $175, $125, and $100 for the best three comparative demonstrations, by means of microscopical slides, of the blood capillaries in young and in aged tissues, canine or human. By young tissues (canine) are meant tissues from animals between the ages of one and three years. By aged tissues (canine) are meant tissues from animals not less than twelve years of age. By young tissues (human) are meant tissues from subjects between the ages of ten and twenty years. By aged tissues (human) are meant tissues from subjects not less than sixty-five years of age. While a preference will be given to demonstrations from human tissues, it will be possible for work in canine tissues to take the first, and indeed all, of the prizes. But of two slides equally well done in all respects, one canine, the other human, the latter will be given the preference. Canine tissues should be from large animals. Twelve slides from young and twelve from aged tissues must be submitted by each competitor, together with a full description of the subjects, methods pursued, and every detail and circumstance which is likely to throw light upon, or account for, any peculiarity. The slides are for comparison as to the condition of capillary circulation, the young with the old, and should be in numbered pairs, or groups from the same kind of tissue. The term "tissue" is used in a general sense; e.g., pulmonary tissue, hepatic tissue, renal tissue, osseous tissue, muscular tissue, nerve tissue, alimentary tissue, etc. No particular schedule of methods for injection or staining will be insisted upon, and no more definite directions or explanations will be given. The slides, carefully packed and boxed, together with descriptive manuscript, can be sent by mail. It is stipulated that the demonstrations which receive the prizes shall become the property of Mr. Stevens, for publication. All others will be returned, if desired. No pseudonymes required. Accompany slides, in every case, with (real) name and address. Unless of known reputation as a biologist, a reference is respectfully solicited. Reservation: no award will be made unless work of at least ordinary merit is submitted. This offer is made on the first day of January, 1890, and will remain open until the twentieth day of August, 1890. Slides and manuscript will be examined and receipted for as soon as received. The prizes will be adjudged on the first day of October, 1890. These nominal prizes are offered less in expectation of results from the money as an agent than in the hope that the offer may furnish a *point d'appui* for really needed work. Besides professional observers and students, there are in the United States a large number of amateur microscopists of acute vision and undoubted talent, who are at present playing with microscopes as with toys, merely to see the curious or pretty things. The time has come to concentrate observation upon the one proper object of biology; viz., the renovation and prolongation of human life. Mr. Stevens's address is Norway Lake, Me.

— Herbert Ward, the African explorer, in collaboration with D. D. Bidwell, begins in the *New York Ledger* of March 1 a series of articles descriptive of a canoe journey of twenty-five hundred miles on the Upper Kongo.