laborer would be found, for the first class of states, fully $25; for the second, nearly $25; for the third, less than $20; for the fourth, about $13.50.

An application of the same test to the value of annual production for each man engaged in agriculture brings equally interesting results in the following table: —

Classes.	No. engaged in agriculture.	Value of products of agriculture.	Value per capita.	Per cent of workers in agriculture.
First class . .	1,060,681	$484,780,797	$457	16.51
Second class .	1,566,875	616,850,959	394	40.12
Third class . .	3,017,971	786,681,420	261	58.85
Fourth class .	2,024,966	325,099,388	161	77.46

The states with less than 30 per cent in farm-labor realize nearly three times as much per man as those which have over 70 per cent in farm-work. In other words, one man in the first class realizes as much as the three men who are competing with each other, having little outlet for surplus production. Three brothers in Alabama, laboring through the year, get as much for their aggregate produce as one farmer receives in Pennsylvania, simply because that farmer has a brother engaged in manufacture and another in mining. It is because in one case there is a market for one product only, thousands of miles away: in the other, there are markets at every door.

It appears evident that the proportion between agricultural and non-agricultural population is a measure of the values of the land, of the production, and of the labor of the farm. These values are rapidly enhanced by the increase of non-agriculturists. This is the lesson of the most authentic statistics of our own and of other countries.

A new system for the treatment of sewer-gas.

BY T. E. JEFFERSON, HUDSON, WIS.

IN this paper, which was well illustrated by diagrams, special reference was made to a series of important inventions which of late have attracted much attention both in this country and Europe. This system chiefly consists in making sewers approximately air-tight by sealing the sewer inlets so as to admit sewage, but exclude the air; making pipe connections between sewers and buildings, and different heating-apparatus arranged to admit the in-flow of atmosphere and the products of combustion into the sewer, and, at the same time, prevent the back-flow of gas; when by the connection of a powerful suction apparatus with the sewer, near its outlet, the removal of sewer-gas and smoke from furnaces and fires, and the thorough ventilation of buildings, is positively effected and regulated as desired.

By employing mechanical force for creating draught for fires, the large percentage of heat heretofore required for this purpose is retained, effecting a corresponding saving in the consumption of fuel.

The main portion of these important discoveries, including the removal of sewer-gas, and the positive means of ventilating buildings and carrying the vitiated atmosphere and poisonous vapors away from contact with the inhabitants, was recently made by Hon. John Comstock of Hudson, Wis., and first introduced in one of the districts of the city of Paris, France, during the present year, where its great utility and practical success are fully demonstrated.

List of other papers.

THE following papers were also read in this section: Building associations, by *Edgar Frisby;* and Health foods, by *T. S. Haight.*

WEEKLY SUMMARY OF THE PROGRESS OF SCIENCE.

MATHEMATICS.

Hyperelliptic functions. — M. E. Wiltheiss starts out from a memoir of Prof. Kronecker's which appeared in the *Monatsberichte* of the Berlin academy for the year 1866, in which a method was developed for obtaining the parameters τ_{ik} of those theta-functions, which, for a certain definite transformation, remain unaltered. Prof. Kronecker started out from a purely algebraical stand-point, and solved the equations which connect the original and the transformed parameters τ_{ik} and τ'_{ik}. Corresponding to the transformation of the theta-functions, there is a transformation referring to the integrals belonging to these functions. Noting this fact, the author of the present paper has arrived at these singular values of the τ_{ik} in another manner, and his results bring into evidence a certain property which is analogous to the complex multiplication of elliptic functions. The author confines his attention solely to the theta-functions of two variables. — (*Math. ann.*, xxi.) T. C. [214

Curvature of surfaces. — M. Rud. Sturm has given here a very interesting theorem analogous to Gauss' well-known theorem concerning the measure of curvature at a point on a surface. Gauss' theorem, stated briefly, is, that if a curve p enclosing an area F is drawn around a point P of a surface, and if a corresponding curve p' enclosing an area F' is traced out on a sphere of radius unity by the extremities of radii drawn parallel to the normals to the given surface at each point of p, then the limit value of the ratios of F' and F will be equal to the inverse product of the radii of curvature R_1, R_2, of the given surface in the point P. M. Sturm's theorem is, that if the curve p is cut out of the given surface by a sphere whose centre is at P, then the mean curvature, viz., $\frac{1}{2}\left(\frac{1}{R_1} + \frac{1}{R_2}\right)$, is equal to the limit value of the ratios of the two perimeters p and p'. — (*Math. ann.*, xxi.) T. C. [215

ENGINEERING.

Pressure on valves. — Professor S. W. Robinson presented to the American society of mechanical engineers, at its meeting in New York, November, 1882, a paper on the theoretical and the experimental determinations of the mean pressure on steam-valves exposed to pressure both above and below. He finds that a line can be determined, circumscribing an area which he calls the equilibrium area of the valve. This area being multiplied by the maximum pressure gives the total mean pressure acting to hold the valve to its seat. The extent of this area is determined by experiment; and a theory of the case is constructed, which is given at length, with the practical formulas derived by means of it for use in designing. — (*Van Nostrand's mag.*, July.) R. H. T. [216

The performance of the Worthington pumping-engine. — Messrs. Shedd and Ward present to the water-commissioners of the city of Buffalo a report upon the performance of a Worthington pumping-engine, recently built for the city. The delivery was 28.8% greater than was demanded under the contract with the makers, amounting to above 19,000,000 gallons per day; and the 'duty' was something above 70,000,000 pounds of water raised one foot high per thousand pounds of steam used. This was above the duty demanded by the city. — (*Ibid.*) R. H. T. [217

CHEMISTRY.

(*Organic.*)

Reconversion of nitro-glycerine into glycerine. — Great difficulty having been experienced in destroying the dynamite recently captured in England, Prof. C. L. Bloxam has tried several methods for decomposing its nitro-glycerine constituent. 1. Nitro-glycerine was shaken with methylated alcohol, and the solution was mixed with an alcoholic solution of K H S. Considerable rise in temperature resulted, the liquid became red, a large quantity of sulphur separated, and the nitro-glycerine was entirely decomposed. 2. Nitro-glycerine was shaken with a strong aqueous solution of commercial K_2S. The same changes were observed as in 1; but the rise in temperature was not so great, and the liquid became opaque very suddenly when the decomposition was completed. 3. The ordinary yellow solution of ammonium sulphide was mixed with the nitro-glycerine, and the mixture evaporated to dryness on the steam-bath, when bubbles of gas were evolved, due to the decomposition of the ammonium nitrite. The pasty mass was treated with alcohol to extract the glycerine. 4. Calcium sulphide, made by boiling flowers of sulphur with slaked lime, was used. Reduction took place as above, but more slowly, and more agitation was required. This last is the cheapest process. — (*Chem. news*, April 13.)

The reducing action of alkaline sulphides on nitro-glycerine was pointed out some time since, and A. H. Elliott, F.C.S., showed in the *School of mines quarterly*, Sept. 15, 1882, that the method admitted of quantitative application. — C. E. M. [218

METALLURGY.

Water-gas as a fuel. — Mr. W. A. Goodyear believes that the fuel of the future in cities, for all domestic as well as for most manufacturing and metallurgical purposes, will be gas of some kind. The ease and cheapness of its distribution, the cleanliness and economy of its use, will, in his opinion, cause at no distant day a revolution in the present use of fuel. As a contribution to that end, he describes an apparatus of his own devising for the manufacture of water-gas, by means of which, he claims, this gas can be made in any desired quantity; and, while leaving a handsome profit to the manufacturers, it can be supplied at a cost that will render its general use more economical than that of any kind of solid fuel. — (*Trans. Amer. inst. min. eng., Boston meeting.*) M. E. W. [219

The recovery of the volatile constituents of coal. — The attention at present paid to the utilization of products heretofore wasted is well illustrated in an account of the Jameson process of coking coal, given before the London society of arts, April 26. The coking-ovens of England are estimated to have a capacity of some 20,000,000 tons a year; and only a slight and inexpensive alteration in the plant would, it is said, recover oil and ammonia to the value of $16,000,000, and good heating-gas to the value of $12,500,000. From the experiments of Sir J. B. Lawes, it has been estimated, that, if all the ammonia from all the raw coal burned in England were utilized in agriculture, 250,000,000 dollars' worth of breadstuff would be added to the yearly produce. The use of raw coal is characterized as a relic of barbarism. — (*Iron*, May 4.) R. H. R. [220

GEOLOGY.

Stratified drift in Delaware. — F. D. Chester describes the relations of the gneissic rocks of Delaware, with their rolling, hilly, and local soils, to the unconformably overlying cretaceous clays extending to the south-east, with stratified gravels derived from the gneiss. These gravels and similarly derived deposits extend even over the top of Polly Drummond's hill, the highest land in the state, two hundred and fifty feet above the cretaceous plain, and three hundred and thirty feet above the sea. Large dolerite bowlders of undetermined origin, sometimes twenty-five feet in circumference, lie on this hill; and a little farther south there are two hills of unstratified detritus and bowlders, which are thought to have been dropped from ice floating in the sea, that deposited the stratified gravels during the submergence of the Champlain period. As the highest point in Delaware was then covered, this measure gives a minimum value of three hundred and thirty feet for the submergence. — (*Amer. journ. sc.*, xxv. 1883, 436.) W. M. D. [221

Meteorites.

Concretions in meteoric iron. — Professor J. Lawrence Smith gives a connected statement regarding the concretions found from time to time in the interior of various meteoric irons. Six kinds

of simple nodules occur, composed respectively of pyrrhotite (troilite), schreibersite, graphite, daubréelite, chromite, and lawrencite. Others consist of several minerals aggregated together. Smith holds, from the study of these concretions, that the containing 'iron was at one time in a plastic state from the effect of heat.' —(*Amer. journ. sc.*, June.) M. E. W. [222

MINERALOGY.

Scovillite. — Under this name, Messrs. G. J. Brush and S. L. Penfield have described a new phosphate from the Scoville ore-bed, Salisbury, Conn. It occurs as a thin crust of a pinkish or brownish color, coating iron and manganese ores. Hardness, 3.5; specific gravity, 4. Before the blowpipe the mineral is infusible, and, with borax and salt of phosphorus, gives beautiful rose-colored beads (didymium) in both oxidizing and reducing flames. It is readily soluble in dilute acids. Chemical analysis yielded P_2O_5 (24.94) . $(Y,Er)_2O_3$ (8.51) . $(La,Di)_2O_3$ (55.17) . Fe_2O_3 (0.25) . H_2O (7.37) . CO_2 (3.59) = 99.83 %. The presence of carbon di-oxide is regarded as due to an admixture of lanthanite, — $(La,Di)_2(CO_3)_3\,9H_2O$; and, deducting the constituents corresponding to the above formula, there is left 82.79 % of a phosphate, which, calculated up to 100 %, gives P_2O_5 (30.12) . $(Y,Er)_2O_3$ (10.28) . $(La,Di)_2O_3$ (55.75) . Fe_2O_3 (0.30) . H_2O (3.57) = 100 %. This corresponds closely with the formula $R_2(PO_4)_2\,H_2O$, where R = (Y, Er, La, and Di). The new mineral is therefore a normal phosphate of the above metals, plus one molecule of water. — (*Amer. journ. sc.*, June.) S. L. P. [223

Ullmannite. — Crystals of this mineral from Montenarba, Sardinia, have been crystallographically investigated by C. Klein. The crystals were embedded in calcite, and were obtained by dissolving the calcite in dilute acetic acid: they were of cubical habit, possessed a perfect cubical cleavage, and showed on the cubic faces the striations so common in pyrite, and characteristic of the parallel or pyritohedral hemihedrons. Besides the cube, the faces of the rhombic dodecahedron and pentagonal dodecahedron, $\pi\infty O_2$, were observed. The chemical analysis was made by P. Jannasch, and yielded S (14.02) . Sb (57.43) . As (trace) . Ni (27.82) . Co (0.65) . Fe (0.03) = 99.95 %, corresponding closely with the formula Ni Sb S. Gravity, 6.84. The mineral is therefore closely related to pyrite, crystallizing like it in parallel hemihedrons, and having an analogous composition in that the nickel and antimony are isomorphous with iron and sulphur. — (*Jahrb. min.*, 1883, 180.) S. L. P. [224

GEOGRAPHY.

(*Africa.*)

French missionary-work in eastern Africa. — The French missionaries sent from Algeria have successfully established a station at Tabora in charge of Père Hautcoeur. Their missions at Ujiji and Usanzé are progressing favorably. That at Uganda, owing chiefly to the petty persecution experienced from king M'tesa, has been abandoned, and the party have taken refuge on the southern shores of Lake Tanganyika. Six new missionaries have been despatched from Algiers to re-enforce the staff at stations in Central Africa. The station at M'rogoro, less than six months old, already presents the aspect of civilization, stone buildings replacing thatched huts; and the adjacent land, until lately covered with forests and jungle, has been cleared, and planted with coffee-bushes, which appear likely to succeed. Other establishments are equally flourishing. — (*Comptes rendus soc. géogr.*, no. 11.) W. H. D. [225

BOTANY.

Protogyny of grasses. — Bailey gives as an example, Spartina juncea. — (*Bull. Torrey club, July.*) W. T. [226

Pollination of prickly pear. — Dr. Kunzé sees, in the irritable stamens of Opuntia vulgaris, a provision for securing close fertilization by insect aid. In fair weather each flower opens on two successive days. Hive-bees, flies, and humble-bees were seen to visit the flowers for nectar, in obtaining which they grasp clusters of stamens, which, when released, fly up against the pistil, from which they slowly recede to their former position. Although the legs of the insects were covered with masses of pollen after visiting a flower, they were not seen to creep over the stigmas: *ergo*, the pollen grains are supposed to be thrown between the stigmas after the sudden movement following the retreat of an insect. It is hardly necessary to add, however, that crossing is well effected by the insects in question, the motion of the stamens insuring a thorough dusting of their bodies with pollen. — (*Bull. Torrey club, July.*) W. T. [227

Mimicry. — Bailey notes the resemblance of a spider to the involucral scales of the swamp thistle, on which it lies in wait for insects which visit the flowers. — (*Bot. gazette, Aug.*) W. T. [228

ZOÖLOGY.

Mollusks.

Pleurotomidae of Senegambia. — Baron von Maltzan reviews the Pleurotomidae of this region, especially of the Island of Goree. He obtained thirty-six species and varieties, of which about one-third are new. Only four were known to Adanson, who first monographed this fauna. About fifteen per cent are European forms, which are smaller and rarer than those of the same species in the Mediterranean. — (*Jahrb. mal. ges.*, vii. ii.) W. H. D. [229

Mollusca of the Caucasus. — Böttger offers an important paper on the land-shells of the Caucasus, supplementary to others printed in preceding years. Rich material has been brought together by Gen. Komaroff and Hans Leder. The Limacidae afford several new forms: the new section Gigantolamax is proposed under Amalia, and Paralimax under Limax. A new genus of Testacellidae, Selenochlamys, is proposed for a form resembling Daudebardia externally, but without an internal shell, and with the respiratory orifice at the right anterior part of the very small clypeus. No known mollusk closely resembles this remarkable slug, which was found

near Kutais. A large number of new species and varieties are described. — (*Jahrb. mal. ges.*, vii. ii.) W. H. D. [230

Monograph of Ringicula. — L. Morlet has published a second supplement to his valuable monograph of Ringicula, in which four new recent and as many new fossil forms are made known, and a synopsis, after Seguenza, of the tertiary Italian species, is added. — (*Journ. de conchyl.*, xxii. 3.) W. H. D. [231

Worms.

New worm with remarkable nervous system. — The Willem Barents on her third voyage captured a worm, which A. A. W. Hubrecht describes under the name of Pseudonematon nervosum. He gives a general account of its structure, and promises a fuller monograph. The animal is about sixty-five millimetres long, one and three-quarters millimetres thick, tapering behind. The digestive tract runs straight through from end to end. On the ventral side, about forty-five millimetres from the head, is a disk, probably a sucker. No traces of sexual, excretory, or sensory organs were found. The epidermis is thin. The muscles form three layers, — a thick external longitudinal, a middle transverse or circular, and an internal longitudinal layer, — variously developed in different parts of the body. The nervous system is very remarkable: it forms a continuous layer completely around the body, and lies immediately inside the layer of circular muscular fibres. It consists, 1°, of a fine network of delicate filaments, appearing as if felted, barely tinged by the staining reagents; and, 2°, of scattered nuclei belonging partly to connective tissue, partly to ganglion-cells. The layer forms a continuous tube from the head, where there is no ganglionic enlargement, back through the body to the caudal region, where the layer is present dorsally only.

Hubrecht further discusses the phylogeny of the nervous system in continuation of his previous paper (*Quart. journ. micr. sc.*, xx. 431). He points out, that, 1°, in its lowest form (Medusae), the nervous system is diffuse, and there are no nerve-fibres properly so called; 2°, in a little more advanced stage it tends to form a layer spread out under and parallel with the ectoderm; the general histological character is the same as under 1°, — a felted network of fine fibrillae, which spring from the ganglion-cells (Actiniae, Psuedonematon); 3°, the diffuse layer is still present, but certain tracts are more developed, making the primitive nerve-cords (Chaetognathi, Chiton, etc.); 4°, the diffuse part is gradually lost, and the cords are retained. These conclusions are confirmed by citations from numerous recent researches. Dr. Hubrecht has, we think, successfully established two very important generalizations, — first, that in the lower animals there prevails a uniform type of nervous tissue, ganglion-cell and nerve-fibre being incompletely differentiated, and the nerve-fibres being in the form of a network; secondly, that the nerves were developed by concentration of the diffuse tissue along certain pathways. His paper is certainly one of much value and originality. Systematically the position of Pseudonematon is uncertain, but it probably belongs somewhere near the nematods and plathelminths. — (*Verh. acad. wetensch. Amst.*, xxii. 3d art.) C. S. M. [232

VERTEBRATES.

Development of the diaphragm and pericardium. — Our knowledge of the changes which lead to the partitioning-off of the anterior end of the body-cavity in vertebrates to form the pericardial and pleural cavities has heretofore remained obscure. Uskow has investigated the subject under Waldeyer's direction, at Strassburg, and publishes an important memoir. The essay opens with a review of the previous literature. The research was carried out principally on rabbits, but also extended to other mammalia, and classes of vertebrates. At nine days (in rabbit embryos) the omphalo-mesaraic veins enter the body from the sides, along the lower wall of the body-cavity, into which they bulge up. The part of the body-cavity in front is cylindrical; behind, fissure-like. The two cylindrical halves meet anteriorly, and unite below the heart, forming the primitive pericardial division of the coelom. The posterior wall of this cavity is pierced by the sinus venosus, and receives the name of septum transversum: it is a thin membrane, which separates the pericardial space from the fore-gut of the embryo. In the next stage, the pericardial space has enlarged, the most important effect of which is to drive the septum transversum backwards until it lies together with the omphalo-mesaraic veins, so producing the membrane which supports the great veins, and divides off the ventral portion of the pericardial space from the dorsal portion and the general body-cavity, or paired coelom. This membrane then forms part of the wall of the pericardial cavity; but it also forms the primitive diaphragm, the dorsal portion of the original pericardial space becoming, in conjunction with the anterior end of the coelom, the pleural cavity.

The pericardial wall consists, according to its development, of three parts: 1°. part of the original wall of the coelom (this includes that portion which remains permanently attached in mammals to the anterior thoracic wall); 2°. the septum transversum, which becomes the pleuro-pericardiac membrane; 3°. the principal part derived from the body-wall, its separation being consequent upon the enlargement of the pleural cavities. The part from the septum is originally continuous with the diaphragm.

The diaphragm is at first a connective tissue structure. The muscle grows in later from the dorsal side, appearing first in embryos (rabbits) of nine millimetres length. It probably is derived from the muscle plates, but that was not determined with certainty. The primitive diaphragm arises in its ventral part from a papillary growth of the septum transversum; in its dorsal part, laterally from the tissue carrying the large omphalo-mesaraic veins; medianly, from the outgrowth of the septum transversum known as the massa transversa.

From the comparative study of other types, the following grades of development of the diaphragm

were ascertained. 1. The ventral and dorsal portions of the diaphragm are completely developed: they completely divide the coelom, and have muscles. The pericardium, except two thin lamellae, is entirely separated from the diaphragm (rabbit). 2. Same as 1, save that a part of the diaphragm remains united with the pericardium (man). 3. Same as 2, but the diaphragm contains no muscles, and its ventral part is completely fused with the pericardium (hen). 4. Same as 3, but the dorsal part is not completely developed, remaining in a primitive condition (lizard) or in an early stage (frog). Here might properly be reckoned certain imperfect developments in man. 5. Same as 4, but the diaphragm, or its ventral part, forms a united whole with the pericardium, remaining at the stage of the septum transversum (Myxinoids, — Ammocoetes). 6. The teleosts stand apart, in that, although, as seen in the salmon, there is a certain separation of the diaphragm from the pericardium, even more than in birds, yet the dorsal portion of the diaphragm is completely wanting.

The paper contains numerous details. The author's nomenclature is confusing, and we have found it very difficult to follow his account. — (*Arch. mikr. anat.*, xxii. 143.) C. S. M. [233

ANTHROPOLOGY.

Mutilations of the teeth. — Ethnographers who have minutely described mutilations of the teeth in other parts of the world have said nothing of a similar practice among the natives of the two Americas. The practice is not common in the western world; and it is a little singular that people who deform to an extraordinary degree their lips, noses, cheeks, and ears, respect the integrity of their teeth. The historians of this practice overlook the abrasions noticed by Vancouver among the Indians of Trinidad Bay, and by Petitot among the Tchiglits at the mouth of the Mackenzie and of the Anderson. Finally, no notice is taken of dental mutilations formerly in use in Mexico and Yucatan, upon which Sahagun, Landa, and Mota Padilla have furnished information. M. Hamy has gathered from the last-named writers their allusions to these subjects, and prepared an illustrated monograph. The drawings indicate both filing and perforations. — (*Bull. soc. anthrop. Paris*, v. 879.) J. W. P. [234

Imperial Chinese tombs. — Among the mountains east of Peking are the imperial tombs. The Great Wall forms the northern boundary of an enclosure five miles square. Besides this, a wide tract outside the boundary-wall belongs to the mausolea, and is forbidden ground, wherein man is not permitted to build dwellings or to bury his dead. Shun-chih (1644–62) and four of his successors sleep here, with the heavens, the hills, and the streams around them. The earlier Manchu princes are buried at Moukden. The tombs are all alike in essential features, built on a southern slope, with a stream in front. In approaching the tomb, the explorer passes first two lofty stone pillars, that serve as a gateway to figures of men and animals in pairs, facing one another on opposite sides. An ornamental archway opens upon a curved marble bridge of several arches, with finely carved balustrade. After crossing the stream, the traveller passes guard-houses and the sacrificial hall on the right and left, and comes upon a small building, in the centre of which stands, supported upon the back of a huge marble tortoise, the memorial tablet, on which is written an account of the deeds of the departed. Halls of entertainment flank this building; and farther on in a direct line are the chapel of the dead, the bright pavilion, and, last of all, the earth-palace, or tumulus, within which the coffin lies. When the body is laid in this earth-palace, the door is shut. Behind the door, inside, is a round hole in the stone floor; and, when the door is shut, a large ball of stone follows it, and, falling into the hole, prevents the stone door ever opening again. The emperor is then said 'to be at peace forevermore.' Mr. F. S. A. Bourne, who gives the information above quoted, entered this enclosure with great difficulty. A minute account of the appearance and function of the two rows of sphinx-like figures adds much interest to the author's narrative. The mausoleum prepared for the present empress's regent is just completed, and cost about £1,500,000. — (*Proc. roy. geogr. soc.*, v. 23.) J. W. P. [235

EARLY INSTITUTIONS.

Malagasy place-names. — We have a long article upon local names in Madagascar by the Rev. James Sibree, jun. The object of the writer is to show how the names of places illustrate the mental habits of the people and their powers of observation. Many names of villages include Malagasy equivalents for the Anglo-Saxon words *tun*, *ham*, *burgh*. Personal names are very common. Villages are named after distinguished chiefs. The article will interest some of our readers. — (*Journ. roy. Asiat. soc.*, April, 1883.) D. W. R. [236

Chinese laws and customs. — An article upon this subject by E. H. Parker appeared in the *China review*, viii. 67. Now we have another by Christopher Gardner. The two writers are of one mind upon most points. It is only upon a few matters of detail that they differ. Mr. Gardner tells us that the laws and customs of China have been very little changed since the seventh century. Chinese law, we are told, cannot be 'squared' with the theory of Bentham and Austin, which resolves all laws into commands imposed by a lawgiver. It is based upon public sentiment and opinion, and upon previously existing custom. It 'follows the instincts of the people.' Then we are told that the tribe has been derived from the family, not the family from the tribe. Exogamy has in China prevailed over enogamy. As for the land, it is held by single families (house communities), or by groups of families (village communities). It is a pity that the writer does not describe the house community and village community more fully, and in more exact language. The article is interesting. — (*Journ. roy. Asiat. soc.*, April, 1883.) D. W. R. [237