

a cheap edition of these books, and sold 10,000 copies within one year. Popular text-books seem to have the largest sales; and Polubojarinow, the publisher, paid to the author of a series of arithmetics, Mr. Jewtushewskij, the sum of 50,000 rubles. From the foregoing it will appear that the notion that Russian literature is made up solely or largely of those writers whose works have thus far been translated into English — Turguenieff, Tolstoï, Dostoyevsky, and Gogol — is fallacious. As a writer in the *Christian Union* recently pointed out, it would be as just to England and America to translate Dickens, Hawthorne, and Haggard into some foreign tongue, and represent them as English literature, as it is to Russian literature to be judged by the writings of the authors now known to us through English translations. "Nothing could be more unfounded or contrary to the fact than the impression which is abroad that we have in these translations a fair presentment of Russian literature. In reality, we who only read English — and even those of us who know French and German — have gained no more of that literature than the faintest glimpse. With very few exceptions, the books that have been Englished are all novels: they are all novels of the modern period, but they do not do the smallest justice to the novelists of that period. We rave about Turguenieff and Tolstoï, but what of Gontcharov, Pisemsky, and Pomyalóvsky, and half a dozen others equally or unequally noteworthy, about whom never a word is said? And then what have the Russian poets, the Russian essayists, the Russian historians, the Russian scientists, done, that we should be kept in the most Cimmerian darkness as to them and their works? By what strange caprice of translator or publisher or public is it that to Anglo-Saxon readers Pushkin, Lérmontov, Griboyédov, Kylov, Bielínsky, Káramsin, Bestyuzhev-Ryúmin, Solóviev, Písarev, Dobrolyúbov, and so many others, remain practically unknown? All the more is there reason to wonder at and deplore this neglect when it is remembered that in ignoring writers like these we are taking special pains, as it were, to hold unliquidated our manifest duty to a great race."

ELECTRICAL NEWS.

NEW INSULATING MATERIAL. — A recent German patent for a new insulating material for electric conductors specifies the use of paper which has been thoroughly soaked in an ammoniacal copper solution. The pasty mass is then pressed against the conducting wires to be covered by means of rollers, and the whole is finally submitted to strong pressure. When dry, the covered wire is passed through a bath of boiling linseed-oil, being left in it until the covering is saturated. This makes it elastic and impermeable to moisture. The covering is said to be durable, and efficient as a non-conductor.

LEAD-COVERED CABLES. — It has been accepted as an acknowledged fact that lead-covered cables, when placed under ground in creosoted wooden troughs, undergo a rapid deterioration of the lead sheathing, owing to the metal being converted into a carbonate; but closer research tends to show that this destruction need not necessarily take place. Close observation of creosoted conduits and lead-covered cables, laid at various times since 1884, apparently prove, according to the *London Electrical Review*, that the destructive agent usually present in freshly creosoted wood disappears almost entirely after a few years. A cable was laid upwards of two years ago in a conduit constructed in 1884, and at this date there is but very slight trace of action on its surface, while part of the same cable laid in an 1888 conduit shows considerable scale of carbonate of lead after one year's exposure. Parts of the same cable placed in other conduits about a year after their construction show but little damage. One cable laid in 1885 is only slightly affected, and it is not anticipated that any further deterioration will take place. Some experiments to test the effect of time and ventilation on creosoted wood were carried out by placing cables covered with an alloy of tin and lead in boxes made of creosoted wood, one box made of wood creosoted more than two years back, and another more recently impregnated. These boxes were sealed up, and opened after a lapse of three months. The samples in the old wood box were barely touched, while the samples in the newer one were thickly covered on the sides and top

with what is chemically known as phenolate. Either phenol, a volatile gas, or acetic acid in combination with carbonic-acid gas, will attack lead and reduce it to a carbonate. If no acetic acid is present in the wood, and the phenol be evaporated by some means or another, there should be no more damage done to lead cables inclosed troughs than if they were run in conduits of other materials; but means should be taken to freely ventilate the troughs, not only to protect the cables, but also to guard against accumulations of explosive gas. Under these conditions, plain lead sheathing would prove as efficient as that made of the tin alloy, the durability of which latter covering can hardly be accepted as assured.

LIGHTNING ON WAR-VESSELS. — Apart from the modern vessels being protected by their construction, or by special provisions for the purpose, the *London Electrical Review* asserts that lightning does not play as destructive a part as it did forty or fifty years ago, as even those ships unprovided with conductors have suffered less damage than a smaller number of ships experienced formerly; not that modern vessels are exempt, but they seem to be struck in a manner which causes fewer fatal accidents, and in some cases even the effects of a lightning-flash have borne so little trace of their origin that they have been credited to the wilful act of some one on board.

HEALTH MATTERS.

The Pathological Bearings of Heredity.

ANIMALS, including man, have arrived at their present state of development by the combined but rival forces of heredity and evolution, the latter term including the effects of surrounding environment. Evolution without heredity, as Ribot observes, would render every change transitory; and every modification, whether beneficial or not, would disappear with the individual. The results of heredity without evolution, on the other hand, would give us the monotonous conservation of the same types fixed once and for all. With heredity and evolution we have life and variation. Evolution produces physiological and psychological modifications, habit fixes these in the individual, and heredity fixes them in the race. These aphorisms, says *The Medical Press*, apply as well to diseased conditions as to health, and, in endeavoring to unravel the mysterious bearings of heredity upon disease, we have to bear in mind the conflicting influence of stability with this tendency to variation. The operation of hereditary tendencies is perpetually disturbed by innumerable circumstances unappreciable by our means of observation, but capable nevertheless of producing varieties infinite alike in extent and degree.

It is well known that sensitiveness, whether to general or special impressions, varies extremely in different individuals. An operation which involves pain amounting to agony to one person will be borne by another with comparative indifference; and the tissues of one person will re-act to stimuli to such an extent as to cause violent inflammation, while those of another prove quite passive under similar circumstances. It is this varying irritability which explains the fact that no two cases are exactly alike of the same disease. These differences are distinctly transmissible from parent to offspring; and, when the inherited quality is a tendency on the part of certain tissues to re-act more readily than normal to morbid influences, we say that a person has a diathesis. What we term, for the want of a better word, idiosyncrasy, is in reality a diathesis or part of a diathesis, — a peculiar susceptibility of the individual to re-act unduly, either in excess or otherwise, to certain stimuli. Idiosyncrasies may be transmitted, as they very frequently are; but they are in any case congenital. These peculiarities of tissue and function often remain latent until some morbid process emphasizes the fact that a particular proclivity exists in the individual. This point cannot be better illustrated than by quoting the well-known story, that, of several hunters who were thrown at the same time into the same stream of water, no two were affected alike. In one an attack of rheumatism marks the tendency of joint-tissues to take on a certain process of inflammation, in another an attack of inflammation of the lungs points out the pulmonary apparatus as the organ least endowed with powers of resistance, while a third

simply gets a cold in the head. As for the horses, they very probably escape scot free in the absence of any special or general variation in the tissue tendencies.

While we recognize clearly enough that certain diseases are largely influenced by inherited tendencies, there are others, and these the majority, in which the influence of heredity is more or less indistinct; but it is as certain as any thing of the nature of a deduction can be that the conduct of a particular organism, in the face of morbid influences, is determined largely by inherited qualities of tissue, even when the susceptibility is difficult or impossible to make out. The problem before us is to discover and elucidate the natural laws which govern and regulate the transmission of mental and physical qualities, or, in the words of Mr. Lewis, "the paths along which forces travel to their particular results." We are already in possession of a large number of facts and observations bearing upon the "how," though the "why" still remains, and is likely to remain, unfathomable. These relative individual differences of bone tissue-cell, organ, membrane, and vessels, which are admitted by all competent authorities, really form the foundation of all sound views in pathology; and the more they are recognized and appreciated, the more will the art of medicine acquire scientific exactitude and increased usefulness to humanity. In the words of Sir James Paget, better treatment will follow better diagnosis, and better diagnosis will certainly follow a more exact pathology.

PEA-SOUP AS A SUBSTITUTE FOR BEEF-TEA.—Dr. Ris of Kloten, Switzerland, says *The British Medical Journal* of Sept. 28, emphatically recommends pea-soup as an excellent substitute for beef-tea for invalids, convalescents, and more especially for patients suffering from cancer of the stomach, or *diabetes mellitus*. Take pease, water, and sufficient amount of some vegetables suitable for soup, and one-half per cent of carbonate of soda, and boil the whole until the pease are completely disintegrated; then let the soup stand until sedimentation is complete, and decant the fairly clear, thin fluid above the deposit. The product is stated to resemble a good meat-soup in its taste, to be at least equally digestible, and at the same time to surpass the very best meat-soup in nutritive value. The latter statement may appear surprising, but the author reminds us that pease (as well as beans or lentils, either of which may be used instead of pease) contain a considerable portion of legumen; that is, a vegetable albumen which is easily soluble in a faintly alkaline water, is not coagulated by heat, is easily absorbed, and equal to the albumen of eggs in its nutritiousness.

MALARIAL FEVER IN EASTERN MASSACHUSETTS.—The results of a study on this subject by Charles H. Cook, M.D., of Natick, are, (1) that the disease seems thus far to have been limited to the cities and towns along the Charles and Sudbury Rivers and the branch of the Blackstone; (2) that it seems to have travelled to the east rather than to the west, that is, in the direction of the prevailing winds rather than against them; (3) that it seems to have developed and increased in seasons below the average temperature equally well as in those above; (4) that some of the marked outbreaks occurred in cold and wet periods, as well as in hot and dry seasons; and (5) that an "essential," as given by at least one authority, — namely, that there must be an average temperature of at least 58° F. for twenty-four hours to develop the disease, — does not hold good in this analysis; neither does another "essential" of an average temperature of at least 65° F. for twenty-four hours to produce an epidemic.

TRANSPLANTING OF A CHICKEN'S CORNEA.—Dr. Gravenigo, of the University of Padua, is said to have successfully performed an operation which hitherto has been vainly tried by various experimenters, both in France and elsewhere. The operation consists in the grafting of a chicken's cornea into the human eye. In the successful case reported by Gravenigo the graft is said to have united quickly, and formed a cornea which was very transparent, shining, and convex.

THE SANDWICH ISLAND LEPER COLONY.—The leper colony on the Sandwich Islands contained a hundred persons in 1884. At present the number is smaller, and most of them are men. The government, according to recent reports, contributes one hundred

thousand dollars a year toward the expenses of the colony, and three years ago the king personally inspected it. The average duration of the disease is eleven years, and the mortality fifty-eight per thousand. The local physician, Dr. Hoffman, is a victim of the disease.

THE FOODS OF DIFFERENT PEOPLES.—Many nations, many dishes! Some articles that are esteemed as delicacies by certain nations are regarded with disgust by others. According to the *Pacific Record*, the Turk is seized with violent trembling at the very idea of eating oysters. The American Indians look upon an invasion of grasshoppers as a mark of especial favor from the Great Spirit, and make the best of such a time to lay up a store of provisions for the future. Buckland states that among certain people a mixture of fish nearly putrefied and soapsuds is preferred to the best butter. In Canton and other Chinese cities rats are sold at ten cents a dozen, and a hind-quarter of dog is more expensive than mutton or beef. Some of the East Indians eat serpents dried in the oven, but despise the flesh of rabbits. Lizard-eggs are a delicacy in the islands of the Pacific, and many people besides the aborigines of the Argentine Republic esteem the flesh of the skunk. Ants are eaten by many peoples, and in Siam a curry of ants' eggs often tickles the palates of the wealthy. The silk-worm is eaten with relish by the Chinese, and a dessert of roast snails is considered a fitting termination of a feast in New Caledonia.

THE DREAD OF DEATH.—Sir Lyon Playfair, in a letter to Junius Henri Browne, author of a paper with the above title, says, "Having represented a large constituency (the University of Edinburgh) for seventeen years as a member of Parliament, I naturally came in contact with the most eminent medical men in England. I have put the question to most of them, 'Did you, in your extensive practice, ever know a patient who was afraid to die?' With two exceptions they answered, 'No.' One of these exceptions was Sir Benjamin Brodie, who said he had seen one case. The other was Sir Robert Christian, who had seen one case, that of a girl of bad character who had a sudden accident. I have known three friends who were partially devoured by wild beasts under apparently hopeless circumstances of escape. The first was Livingstone, the Great African traveller, who was knocked on his back by a lion, which began to munch his arm. He assured me that he felt no fear or pain, and that his only feeling was one of intense curiosity as to which part of the body the lion would take next. The next was Rustem Pacha, now Turkish ambassador in London. A bear attacked him, and tore off part of his hand, and part of his arm and shoulder. He also assured me that he had neither pain nor fear, but that he felt excessively angry because the bear grunted with so much satisfaction in munching him. The third case is that of Sir Edward Bradford, an Indian officer now occupying a high position in the Indian office. He was seized in a solitary place by a tiger, which held him firmly behind the shoulders with one paw, and then deliberately devoured the whole of his arm, beginning at the end and ending at the shoulder. He was positive that he had no sensation of fear, and thinks that he felt a little pain when the fangs went through his hand, but is certain that he felt none during the munching of his arm."

CHOLERA IN ASIATIC TURKEY.—Bagdad and Bussorah have been visited by an epidemic of cholera. The disease was first noticed in obscure inland spots, whence it spread to the port of Bussorah, near the head of the Gulf of Persia.

TOBACCO AND INSANITY.—The essay recently read before the San Francisco Medical Society by Dr. Shiels, on tobacco and its effects, was one deserving of exceptional credit, as well for the thoroughness of his investigations as for the general fairness of his conclusions. The doctor addressed a series of questions to the members of a leading New York medical society individually, and upon their answers his deductions are mainly based. The general trend of the decisions of this medical tribunal is that smoking in excess is bad, which few will be found to dispute. The question, "Have you ever seen a case where the brain was permanently affected by the use of tobacco?" elicited a symphonious chorus of noes all along the line, disturbed only by the solitary demurrer of

an ex-asylum superintendent, who claimed five cases of insanity due to the weed. Dr. Shiels believes there must have been some error of diagnosis here, and beyond a doubt the large majority of asylum physicians would, if canvassed, sustain him in his scepticism. It is only in a remote and subsidiary sense that the tobacco habit can be considered a factor in the production of insanity. Its opponents urge that it promotes nervousness. This depends on the individual and the amount indulged in. They also claim that it weakens moral fibre, impairs nutrition, fritters away a man's time, and induces a host of other evils. But it is not upon the brain that the penalties of its immoderate use are visited: the organs more likely to suffer are the heart, stomach, and throat.

THE ETIOLOGY OF GOITRE. — Dr. Th. Kocher of Berne, Switzerland, first of all determined accurately in what parts of his own canton goitre was common. On comparing the water of these regions with that of goitre-free neighborhoods, says the *London Lancet*, he finds that the one striking difference is that where goitre is abundant the water contains a considerable quantity of organic or organized material, and he concludes that it is this factor which determines the prevalence of goitre in any district. He finds that in certain goitrous parts particular families who have access to special water-supplies in which there is not this quantity of organic matter remain free from goitre, although breathing the same air, living on the same soil, engaging in the same occupations, and eating the same food, as their very goitrous neighbors. On comparing the chemical composition of goitrous and non-goitrous water in the Berne canton, the only other difference he found was that the quantity of sulphate of lime was less in the goitrous; but, as it is well known that goitre is often found in those who drink water richly laden with this salt, this difference cannot explain the great pathological fact. Dr. Tovel has found that the water in goitre-free parts contains a very minute quantity of micro-organisms; and it has further been shown that if goitrous water is injected into rabbits the thyroid gland is very prone to swell, although in dogs the injections have no effect. Kocher's investigations do not certainly completely clear up this difficult subject, but they throw some light upon it, and as such are to be heartily welcomed.

NOTES AND NEWS.

THE corner-stone of the new building of the New York Academy of Medicine, in West 43d Street, near Fifth Avenue, was laid with appropriate ceremonies on the afternoon of Oct. 2.

— The Brussels correspondent of the *London Times* points out that the number of foreign students at the German technical high schools is steadily increasing, especially at Berlin, where last year there were thirteen English students preparing for the professions of mechanical and mining engineers, architects, and chemists.

— The Durban correspondent of the *London Times* telegraphs that the Cape Government has decided to adopt Professor Seeley's proposal for a geological survey under his charge. He believes that other eruptive diamond-bearing tracts like Kimberley exist elsewhere.

— In a paper recently published in the "Transactions of the St. Louis Academy of Science," Nipher has shown that the average rate of rainfall on the State of Missouri during the ten years ending Dec. 31, 1887, was 196,000 cubic feet per second. During the same interval, the average river-discharge of the Mississippi River at St. Louis was 191,000 cubic feet per second.

— Speaking lately at the meeting of the British Association, Sir Lowthian Bell said, "If technical education means, as is sometimes alleged, a system by which, along with scientific instruction, manual dexterity in the use of tools, or a practical knowledge of various manufacturing processes, has to be acquired, I confess I am not sanguine as to the results. Certain I am, that if foreign workmen are more skilful in their trade, which as a rule I doubt, and which in the iron trade I deny, this superiority is not due to scientific training in the manner proposed; for in this they possess, so far as I have seen, no advantage over our own workmen. My objection to the whole system is the impossibility of any thing approaching a general application being practicable. I have not a

word to say against the rudiments of science being taught wherever this is possible. The knowledge so obtained may often give the future workman a more intelligent interest in the employment than he at present possesses; but I think they who expect much good to attend such a thin veneer of chemistry or physics do not take sufficient account of the extent of the knowledge already possessed by more highly educated men, who are now directing the great workshops of the world. It is by extending and enlarging this that substantial aid has to be afforded to industry and science, and not by teaching a mere smattering in our primary or any other schools."

— At St. Petersburg, on Sept. 7, several Pulkova astronomers and geodesists took advantage of the ascent of a balloon belonging to the Technical Society to test the accuracy of barometrical measurements. According to *Nature*, the aeronauts, who reached a height of 1,800 metres, took with them, besides chronometers and various meteorological instruments, a barometer, a barograph, and an aneroid; and they obtained, in addition to the curve of the barograph, the various heights at which the balloon stood during its ascent and descent for twenty-eight different moments. The heights obtained from these measurements will be compared with those found by geodetical angular measurements, which were made at five different places as far distant from one another as Cronstadt, the St. Petersburg University, Kolpino, and Pargolovo; that is, at distances of more than thirty miles between the extreme stations. The geodetical measurements thus secured are now being calculated.

— A botanical garden has been established in the Alps of Valais at an elevation of more than 5,600 feet above the level of the sea. It is situated on a cone-shaped knoll, which is about 200 feet high, and composed of a number of natural terraces, planted with *Pinus cembra* and larch, and faces north, east, and west. On the summit is a plateau facing the south, on which will be a little *châlet*, containing the library and herbarium of the garden. The Association for the Protection of Plants has bought the land, and converted it into an alpine garden for plants from all the alpine regions of the globe. Representatives of the floras of the Himalayas, of the American mountains, of New Zealand, of the Antarctic regions, of the Caucasus, of Siberia, of the Pyrenees, the Alps, the Carpathians, and the Ural, will be separated, and each cultivated in a special division. Naturally, M. H. Correvon was named director of this new trial-garden, in which he had already planted several thousand mountain plants. This garden is at so high an elevation that interesting observations can be made concerning the floras of all the alpine regions of the globe, on the relations of plants with insects, their acclimatization, variability, etc. Already consignments of plants have been sent to M. Correvon; and a German botanist who is travelling in the East, and is continuing the work of Boissier (M. Bornmüller), has promised some interesting specimens. Other parcels are expected from Canada, Greenland, and New Zealand. The *Gardeners' Chronicle*, from which we take these facts, invites all who are in suitable latitudes to send to M. Correvon seeds or bulbs from the northern regions in which they are travelling, for the garden of Bourg St. Pierre, which will necessarily serve later on for the temporary reception of plants from high altitudes which cannot be acclimatized directly with us, but require to be subjected to an intermediate temperature first. In this way, M. Correvon is going to try to acclimatize the celebrated but fragile *Calypso borealis*, which he hopes to introduce into cultivation by accustoming it to this intermediate position.

— The Ceylon papers announce the death of an elephant named Sella, which had served the Public Works Department for over sixty-five years. Originally, we learn from *Nature*, Sella belonged to the last of the Kings of Kandy, Sri Wickrema Raja Singha, and was one of about one hundred elephants which passed to the British Government in 1815, when the Kandyan dynasty was overthrown and the whole island passed under British rule. It was supposed at that time that Sella was fifteen years of age, but this was uncertain. In 1880 it was decided that all the elephants belonging to the Public Works Department should be sold, and Sella fell to a well-known resident of Colombo, Mr. de Soysa. The animal aided in several *keddah* operations for the capture and taming