

Peru included in the Amazon basin. It consists mainly of an account of the various diseases. Dr. Gavazzi gives a short account of the hydrology of the lower part of the River Krka in Dalmatia. Among the smaller articles contributed is a biography of Huxley by Dr. Haas, an account of the German expedition of Lieut. von Carnap-Querheimb and Dr. Grüner in Togoland, and of Dr. Krüger up the Palena river in Chile. There is also a short notice of Glave, who did excellent work under Stanley on the Congo, and died there in May last. It also contains a report on the various expeditions engaged in work in Africa. From this we learn that Capt. Bottego is attempting to march from Barawa, on the Somali coast, to Logh, on the Juba; thence he is to cross to Lake Rudolf, and explore the course of the Omo, from its mouth to the point where Prince Ruspoli was killed. The King of Italy and the Italian Government have each contributed 40,000 lire for this expedition. Prince Boris, the well-known Russian sportsman, has been shooting in the Ogaden country in Somaliland, and has traced the Dachato river to its confluence with the Webi Schebeyli. Dr. Humpelmayr left Berbera in June in order to march across East Africa from north to south, as far as Mombasa.

THE Zoological Society have just issued the thirty-first volume of the *Zoological Record*, containing a summary of the zoological literature published in the year 1894. The various articles have been prepared by Messrs. J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulanger, W. A. Herdman, B. B. Woodward, D. Sharp, F. A. Bather, R. Hanitsch, and Miss Florence Buchanan. The whole volume has been edited by Dr. D. Sharp, F.R.S., of the Cambridge University Museum. Great credit is due to the Society and to the Editor for the early date at which this volume has been published. We observe that the corresponding *Record*, just finished in Wiegmann's *Archiv*, only relates to the year 1890, being thus *four years* behind that of its English rival. A very useful feature in the present volume is the newly revised list of abbreviations used in the *Record* for the titles of the *Journals* and *Transactions* that contain zoological papers. These periodicals are now, as is well known, exceedingly numerous, and increase in number every year. Some sixty or seventy new titles have been added to the present edition. The principal libraries in London and Cambridge, in which the various periodicals are to be found, are indicated by key-letters attached to each title, so that the recorder in each subject may always know where to go for his information. We observe that the present volume contains no records for the Crustacea, Arachnida, Myriopoda, and Coelenterata, the naturalists to whom these subjects were assigned (Mr. R. I. Pocock and Dr. S. J. Hickson) not having delivered their manuscripts at the promised date. These deficiencies are much to be regretted; but the early appearance of a *Zoological Record* is a matter of so much importance, that we cannot but approve of the Editor refusing to wait for the convenience of his tardy coadjutors.

A FLORA of the Gramineæ of France, Belgium, and Switzerland is in preparation by M. T. Husnot, of Cahen, near Athis (Orne).

THE Christmas course of lectures, adapted to a juvenile auditory, at the Royal Institution, will be delivered this year by Prof. John Gray McKendrick, F.R.S. The subject will be "Sound, Hearing, and Speech," and the lectures will be experimentally illustrated.

A SKETCH of the life and personality of M. Berthelot, now Minister of Foreign Affairs, appears in the current number of the *Chemist and Druggist*. "The Republic has no use for chemists," is said to have been the remark made by the tribunal which condemned Lavoisier to the guillotine. The words are probably apocryphal, but, at any rate during this century, France

has in many ways shown her appreciation of the abilities and work not only of chemists, but of all her scientific investigators.

IN our report of the opening of the Chingford Museum (p. 16), the writer inadvertently wrote "Dengey Hundred" in reference to Mr. Walter Crouch's collection of shells. He desires us to state that the collection was made in the Becontree Hundred, which comprises the Forest District.

THE Central Hydrographic Office of Vienna has published its first *Jahrbuch* containing daily or monthly rainfall values at 861 stations, and tidal observations at 493 stations, for the year 1893. The work occupies 562 large folio pages, and contains brief discussions of the observations, arranged according to the various river systems, and a map showing the yearly distribution of rainfall over the entire area. The publication is a valuable contribution to meteorological and hydrographical science.

THE additions to the Zoological Society's Gardens during the past week include a Blotched Genet (*Genetta tigrina*), two Crossed Snakes (*Psammodphis crucifer*), a Smooth-bellied Snake (*Homalosoma lutrix*), a Rough-keeled Snake (*Dasyplettis scabra*), a Many-spotted Snake (*Coronella multimaculata*), a Hygien Snake (*Elaps hygie*) from South Africa, presented by Mr. J. E. Matcham; eight Great Tits (*Parus major*), British, presented by Mr. Brunsdon; a Puffin (*Fratercula arctica*), British, presented by Dr. J. B. Johnson; two Lions (*Felis leo*, ♂ ♀) from Africa, deposited; a Black-faced Spider Monkey (*Ateles ater*) from Eastern Peru, purchased.

OUR ASTRONOMICAL COLUMN.

A NEW COMET.—A telegram, received from Kiel on November 18, announces the discovery of a new comet by Mr. Perrine at the Lick Observatory on the 16th inst. At the time of observation the comet was in R.A. 13h. 44m. and Decl. 1° 40' N.; accordingly, it was nearly midway between ζ and τ Virginis, and would rise at London about 3.40 a.m. It is described as having a bright tail.

THE NEW MEROPE NEBULA.—The round bright nebula very close to Merope, in the Pleiades, which was discovered by Prof. Barnard in 1890, has recently been observed by him with special reference to its position (*Ast. Nach.* 3315, p. 42). With respect to Merope, its position angle for 1895.67 was 166°.6, and distance 33".58; these figures agree remarkably well with the earlier measurements, and they indicate that the place of the nebula can be determined with such precision, that repeated observations may be expected to show whether it has any proper motion, or physical connection with the star. It is remarked that the nebula is only difficult in small telescopes because of its extreme closeness to the star, and that away from the star it would be an easy object in almost any telescope. The use of an occulting bar in the eyepiece of the telescope would probably facilitate observations of the nebula.

NUMBER OF NEBULÆ.—The number of known nebulae has during the past few years been so largely increased by the labours of different observers, and the modes of publication have been so varied, that Dr. Dreyer's new index catalogue of the recent discoveries will be highly appreciated (*Mem. Roy. Ast. Soc.* vol. li. p. 185). This is a continuation of the well-known "New General Catalogue," which contained particulars of the 7840 nebulae and clusters known up to the end of 1887, and brings the information to the beginning of the present year. The seven years' observations have resulted in the detection of 1529 new nebulae, so that the general catalogue and the index together give the positions and descriptions of 9369 objects. More than half of the new discoveries are to be placed to the credit of M. Javelle, who has the advantage of employing the great refractor of the Nice Observatory. It is notable that only a very small proportion of new nebulae has been discovered by the photographic method. Most of the objects included in the index are very small and faint, and it is remarked that they are probably only a small fraction of the total number visible in large telescopes. Dr. Dreyer considers it desirable that some of the possessors of large telescopes should turn their attention from the search for very faint nebulae to "the less showy but more useful work of verifying the many old nebulae which require re-observation."

A NEW STAR IN THE CONSTELLATION CARINA.—The first number of the Harvard College Observatory *Circular* contains a note to the effect that, from an examination of spectrum-photographs taken at the Arequipa Station of the Observatory, Mrs. Fleming has discovered that a new star appeared in the southern constellation Carina in the spring of this year. A photograph of a number of stars in the constellation contained a spectrum having bright hydrogen lines accompanied by dark ones of slightly shorter wave-length. Upon comparing this spectrum with those of Nova Aurigæ and Nova Normæ, it was seen that all three resembled one another, and were apparently identical in their essential features. A later photograph showed a slight change in the spectrum; a line at about wave-length 4700 being as bright as the hydrogen lines, though on the earlier photograph it was barely visible. These facts led to a close examination of all the sixty-two photographs of the region containing the star. Upon the first, taken in May 1889, no trace of the star could be made out, though stars of the fourteenth magnitude had recorded their existence. The star first appears on a negative taken on April 8 of this year, and last upon one obtained on July 1, its magnitude during the intervening period having diminished from the eighth to the eleventh. The approximate position of the star is R.A. 11h. 39m., Decl. -61° 24'.

CHOLERA IN GERMANY IN 1894.

THE part just issued of the *Arbeiten aus dem Kaiserlichen Gesundheitsamte* is devoted to a very elaborate report on all the cases of cholera which occurred in Germany during the past year. The inquiry has been so arranged that each district is responsible for its own report. Thus Prof. Dr. von Esmarch has drawn up the document relating to East Prussia, Prof. Dr. Flügge furnishes the statement for Schlesien, Prof. Dr. E. Fraenkel describes the outbreak which took place in the neighbourhood of Marburg, and so on, whilst a general introduction has been written by Regierungsrath Dr. Kübler.

In all 1004 cases of cholera occurred between May 23 and the middle of December, 1894, out of which 490 ended fatally. These figures, taking the population of the Empire at its official estimate of 49,429,470, represent 0.2 cases of cholera per 10,000, and a mortality from cholera equal to 0.1 per 10,000. The report is extensively illustrated, but one of the most instructive appendages is a map giving a graphic representation of localities in which cholera was notified. Here at a glance it may be seen how Germany suffers in this respect from her close proximity to Russia and Galicia in the eastern portions of her Empire, by far the greater number of outbreaks having taken place in East and West Prussia, whilst in the districts bordering on France, Belgium and Holland, hardly any cases of cholera occurred.

Dr. Kübler does not hesitate to assert that practically all the cases of cholera which took place were attributable to fresh infection imported into the country. West Prussia was last year at a particular disadvantage in this respect, for whilst cholera has invariably found its way from Russia along the water-ways, this part of Germany, being so intimately connected with Russia by the Vistula, in 1894 a specially alarming outbreak of cholera raged in these Russian and Galician districts, and thus every opportunity was afforded for its ingress into Germany.

The various reports seem to be almost unanimous in stating that cholera is disseminated throughout the Empire well-nigh exclusively by means of the traffic along the rivers or water-ways of the country, and that it is here that the greatest watchfulness has to be exercised. Such surveillance has, however, exerted a most salutary influence upon the hygienic conditions obtaining on ships, and although the interference was in the first instance opposed by the men, the latter are now most eager and active in carrying out the sanitary improvements, and the best results have ensued.

It is interesting to note that not a single case of cholera occurred in Hamburg,¹ and only six in the whole of the Elbe district.

There cannot be a doubt that these most satisfactory results are a direct consequence of the splendid way in which the regulations drawn up by the German Cholera Commission of 1893 were carried out, and that it is to the conscientious manner in which the various officials fulfilled their instructions, that

¹ The fatal case of cholera, which occurred in the Hamburg Hygienic Institute, is not included, as this was due to accidental infection during the carrying out of some laboratory experiments on cholera.

Germany owes her comparative freedom from cholera and its restriction when an outbreak did occur.

Prof. Flügge cites an interesting table confirming the improvement which has taken place in combating cholera, in which the total number of cases of cholera which have occurred in Oberschlesien from the years 1831 to 1894 are given.

Year.	Cholera cases.	Year.	Cholera cases.
1831	1658	1855-56	5498
1832	3270	1866	9069
1836	4324	1867	4438
1837	1159	1872-73	2332
1848-49	5903	1874	2499
1851	898	1893	7
1852-53	3856	1894	346

This improved condition, which is so apparent within the past twenty years, Prof. Flügge ascribes to the achievements of Robert Koch, whose labours have revealed not only the nature of cholera, but also the most effective way of dealing with it and crippling its power.

But perhaps the most striking testimony to the effectiveness of the measures taken to stamp out cholera, is to be found in the fact that in spite of the prevalence of cholera in East and West Prussia, the army manoeuvres were conducted on a large scale in this district, and no cases of cholera occurred amongst the troops. As an instance of the precautions taken, it may be interesting to read the following instructions which were issued, such instructions being by no means the most elaborate which were carried into execution.

During the mobilisation of troops on the Vistula, no eatables were allowed to be taken; to prevent the river water from being drunk, casks of boiled drinking water accompanied the soldiers, and every man was provided with an infusion of tea; further, it was ordered, and most strictly carried out, that all articles of clothing which had come in contact with Vistula water, were not to be returned to the barracks, but to be sent straight to the disinfecting station, and the men were further obliged to wash their hands with soap and pure spring water on the parade ground each time after the various drills had been gone through.

There seems to be no doubt that personal disposition to cholera, as in diphtheria and other zymotic diseases, varies with the individual, and members of a cholera-stricken household, although not themselves affected, may in cholera, as also in diphtheria, become the transmitters of the disease. This is an accepted fact in Germany, and Dr. Kübler states that last year this received fresh confirmation from the bacteriological evidence afforded by numerous investigations of perfectly healthy persons in cholera surroundings. The isolation of these suspects, Dr. Kübler regards as an important measure in helping to restrict cholera-infected areas.

This disposition to cholera, even in cholera-disposed individuals, appears to vary at different seasons of the year, and the consensus of opinion, derived from all parts of Europe, decrees the late summer and autumn as the period when the chances of infection are greatest. What the special circumstances are which determine this seasonable predisposition, no one rightly understands, and a great diversity of opinion on this question exists; but there can be no doubt as to the facts, and the following statistics of cholera cases per month, collected over a period of more than thirty years in Schlesien, bring out this point very clearly.

January	743	July	2029
February	515	August	7065
March	381	September	11065
April	591	October	10787
May	712	November	6949
June	1446	December	2648

The organisation and elaborate machinery necessary to combat effectively with cholera, and the discipline with which the sanitary precautions have been carried out in Germany, call for ungrudging admiration; it is, therefore, with the more surprise that we learn from Prof. Flügge's report how much remains yet to be accomplished in the management of so important a matter as disinfection. The most approved apparatus was frequently rendered useless by the ignorance of those to whom the work of disinfection was entrusted. "The modern practice and technique of disinfection is something," writes Prof. Flügge, "which every doctor does not *eo ipso* understand or can learn either from