

bird is described, named *Tringa pilocnemis*.—In the Mammoth Cave Mr. A. S. Packard met with a new Japyx, to which he has given the specific name "*subterraneus*."

*Astronomische Nachrichten*, No. 2,003.—This number contains a paper by W. A. Rogers, of Harvard, On the orbit of the minor planet Felicitas (109). The elements and perturbations are given. Tacchini gives a number of observations of Coggia's comet, made with the meridian circle at Palermo. Schmidt also gives a list of observations of the position of the same comet for almost every night from May 3 to July 15. Schulhof gives several sets of elliptic elements for Coggia's comet, and it appears that it may be the same body as was seen in 1734, and so having a period of 137.1 years; or it may have a period of 12184.3 years, as shown by another set of elements. The author also adds an ephemeris from Aug. 31 to Oct. 6. D'Arrest also gives observations on this comet.—Dr. Zenker contributes a note On the light of the comet being polarised in a plane passing through the sun and comet, showing the presence of reflected sunlight.—Konkoly adds a note On the spectrum of the comet.

No. 2,004 contains a catalogue by Engelmann of the positions of fixed stars.—Pogson gives his observations on Biela's comet, made in November and December 1872. At Madras, on Nov. 2, at 17h. 31m. 1.3s. Madras mean time, its R.A. was 14h. 7m. 12.66s., and P.D. 124° 45' 21.1"; and on Dec. 3, at 17h. 13m. 11.3s. its R.A. was 14h. 21m. 55.11s., and P.D. 124° 4' 37.5".—Prof. Watson gives the elements and an ephemeris of Aethra (132).—Winnecke and Bruhns contribute notes on the positions of Borrelly's comet, and Dr. Holetschek has calculated the following element and ephemeris:—

T = Aug. 26.7199 Berlin time.

		°	'	"	
	$\pi$	=	343	57	50
	$\Omega$	=	251	44	18
	$i$	=	41	55	32
	Log. $q$	=	9.99292		
			R.A.		D.
			h.	m.	s.
Aug. 26	.	.	12	33	48 + 74 4.0
" 30	.	.	11	58	19 + 74 20.7
Sept. 15	.	.	9	50	27 + 72 0.6
Oct. 1	.	.	8	22	21 + 66 17.0

*Zeitschrift der Oesterreichischen Gesellschaft für Meteorologie*, Aug. 1.—The first article in this number is a statement by Capt. Hoffmeyer, director of the Royal Meteorological Institute at Copenhagen, of his plan, already noticed in NATURE, vol. x. p. 146, by Mr. R. H. Scott, for publishing daily weather charts for Europe and part of the Atlantic. It is here illustrated by a specimen chart. Next follows an examination by M. Raulin of the distribution of rain in Turkey in Europe and neighbouring parts. Observations were made at Pirano and Trieste between 1787 and 1807, and since 1841; in Corfu since 1845; at Ragusa since 1851; and at other stations, of which five are outside the peninsula, in later years. All the stations are near the margin of this large region, so that the weather of the interior is not yet well known. M. Raulin divides the year into two periods, a cold one from October to March, and a warm one from April to September. The practical significance of this division is that the rainfall of the warm period satisfies the immediate wants of vegetation, while that of the cold season goes mainly to the supply of wells and rivers. The rainfall at Fiume is very large, also at Ragusa, Janina, and Corfu, but very small at Athens and Smyrna. France has been divided into districts, each having its peculiar distribution of rain through the year, and the same method is adopted here. The first district, like the plain of Northern Europe, has more rain in summer than in winter, and includes Austria, Carinthia, Styria, Hungary, Southern Russia, and the Lower Danube, to Bucharest. Laibach belongs to the second district, having a rainfall steadily increasing from winter to autumn. To the third, with a very dry winter and summer and very wet autumn, belong St. Magdalena, Trieste, and Semlin. To the fourth, with a dry summer and rainy autumn, Dalmatia, Albania, Athens, Pera, and Scutari. Among the "Kleinere Mittheilungen" we have an interesting account of the climate of the Isthmus of Tehuantepec, from a report of the United States Government Survey Expedition; a notice of Herr Mohn's results derived from observations at Novaya Zemlya and Spitzbergen, made by Tobiesen, who died while wintering at the former place; and of Mr. Draper's paper, in which he shows the fears of a supposed change of climate in the Eastern States of North America to be groundless.

SOCIETIES AND ACADEMIES  
PARIS

Academy of Sciences, Aug. 24.—M. Bertrand in the chair. The following papers were read:—Ninth note on guano, by M. E. Chevreul.—Study of the fossil grain found in a silicified state in the coal formation of Saint-Etienne. Second part: Description of genera, by Ad. Brongniart. The author describes *Polylophospermum*, *Codonospermum*, *Stephanospermum*, and *Eitheolesta*.—Note on the Central Sea of Algeria, by M. E. Roudaire. This is a reply to objections raised by MM. Fuchs and E. Cosson.—Researches on the effects of powder in firearms, by M. E. Sarrau.—On the passivity of iron; second note, by M. A. Renard.—Memoir on vegetable protoplasm, by M. Ganeau.—On some phenomena of localisation of mineral substances in the Articulata; physiological consequences of these facts, by M. E. Heckel. The author has been feeding insects with arsenic. The metallic powder was mixed with flour, and after repeated small doses the insects (*Mantis religiosa*, *Blatta occidentalis*, and *Cerambyx heros*) were killed and various parts of the intestinal tube examined. The Malpighian tubes only gave decided indications of arsenic.—Various communications on *Phylloxera vastatrix* were received from MM. Ador, Boutin, Rommier, Morlot, Barnier, and others.—On a new formula for obtaining by successive approximations the roots of an equation of which all the roots are real, by M. Laguerre.—On the direct combination of chromic acid with wool and silk; applications to the colouring and analysis of wines, by M. C. Jacquemin. M. C. Chevreul made some remarks on the foregoing paper.—On the ureides of pyruvic acid and its brominated derivatives, by M. E. Grimaux. Pyruvic acid heated with urea gives a substance of the formula  $C_{12}H_{14}N_8O_4$ . When excess of urea is employed the compound  $C_{10}N_{16}N_8O_7$  is produced. With excess of acid another body is obtained, of which the composition has not yet been established. A nitro-body of the formula  $C_{12}H_{10}N_8O_{11}$  has been prepared from these compounds, and likewise a ureide of tribrompyruvic acid of the formula  $C_{10}H_8Br_6N_8O_6$ .—Analyses of various pieces of calf flesh, mutton, and pork sold in the Paris market in 1873 and 1874, by M. Ch. Mène.—Anæsthesia produced by the injection of chloral into the veins for the removal of a cancerous tumour, by M. Oré.—Application of the graphical method to the determination of the mechanism of rejection in rumination, by M. J. A. Toussaint.—Note on the physiological action of apomorphine, by M. C. David. The author has experimented on dogs, cats, pigeons, rabbits, and guinea-pigs. The influence of various reagents on the alkaloid has also been studied.—Action of the sulphydric acid of the sources of the Luchon on granitic galleries, by M. F. Garrigou.—Observations of the Perseides made at the Observatory of Toulouse on August 5, 7, 8, and 9, 1874, by M. Gruy.—Observations made at Paris of the shooting stars of the month of August 1874; progress of the phenomenon from 1837 to 1874, by M. Chapelas.

CONTENTS

FIFTH REPORT OF THE SCIENCE COMMISSION, II. . . . .	PAGE 351
THE APPLICATION OF THE LAWS OF SELECTION TO AGRICULTURE. By Prof. THOMAS BALDWIN. . . . .	352
DARWIN'S "CORAL REEFS" . . . . .	353
LETTERS TO THE EDITOR:—	
The Long Peruvian Skull.—Prof. DANIEL WILSON. . . . .	355
Pollen-grains in the Air.—HUBERT AIRY . . . . .	355
Chrysomela Banksii.—J. TRAHERNE MCGGRIDGE . . . . .	355
The Aurora Borealis.—HENRY R. PROCTER . . . . .	355
ROBERT EDMOND GRANT, M.D., F.R.S. . . . .	355
CONFERENCE FOR MARITIME METEOROLOGY . . . . .	356
DEEP-SEA SOUNDINGS IN THE PACIFIC OCEAN . . . . .	356
PROCEEDINGS OF THE FRENCH ASSOCIATION. By W. DE FONVIELLE. . . . .	357
THE SIDEROSTAT ( <i>With Illustrations</i> ) . . . . .	358
NOTES . . . . .	359
THE BRITISH ASSOCIATION . . . . .	361
ON THE HYPOTHESIS THAT ANIMALS ARE AUTOMATA, AND ITS HISTORY. By Prof. HUXLEY, F.R.S. . . . .	362
THE CARNIVOROUS HABITS OF PLANTS. By Dr. HOOKER, Pres. R.S. . . . .	366
BRITISH ASSOCIATION REPORTS . . . . .	372
SCIENTIFIC SERIALS . . . . .	373
SOCIETIES AND ACADEMIES . . . . .	374