four hours, is prescribed to the languid lady; but a large amount of anatomical knowledge, of mechanical dexterity, of practical acquaintance with surgery, and of knowledge of its great rules, are essential; and therefore we maintain that, on the eve of a war, the thirty-five appointments made within the last few weeks, should have been prizes worthy of the *élite* of our hospitals and dissecting rooms. The East India Company could at once secure such select surgical officers; and why should our glorious British Navy have to put up with those who can get no other employment? Notwithstanding this Parliamentary defeat, let each of us keep the subject before the public, and bring it privately before every member of both Houses with whom he may come in contact; for who among them are not personally interested in the efficiency of the naval medical service? Who among them, in a few weeks, or even at the present moment, may not have sons, or brothers, or connexions, exposed to the most appalling injuries, requiring the highest skill? The degradation of the naval medical service is, in fact, exposing to bad surgery not only the finest fellows in the world—the body of sailors—but likewise the officers, among whom are the *élite* of our aristocracy.

ASSOCIATION INTELLIGENCE.

MEDICAL BENEVOLENT FUND.

At the last meeting of the Committee, the health of Mr. Newnham not permitting him to continue the arduous duties of Honorary Secretary to the Fund, in addition to those of Treasurer, Dr. James Bright, having offered to undertake the office of Honorary Secretary, was unanimously appointed. Mr. Toynbee still retains the office of Honorary Secretary to the Committee; but all subscriptions are to be paid to the Treasurer, or to Dr. James Bright. An Assistant Secretary was also appointed to assist Dr. Bright in receiving subscriptions in the Metropolitan Districts.

The following cases were relieved:—

I. The widow of a medical man formerly resident in the Borough, left unprovided for. Three years ago was voted £10 a year for three years. Voted £10.

II. The widow of a medical man who formerly practised in Cornwall: he left his wife and two children wholly unprovided for, he having had bad health long previous to his death. Recommended by Dr. Harness and Mr. Lawrence.

III. A medical man in the Midland Counties having a wife and three children, has fallen into poverty on account of his ill health, which has prevented him from pursuing his avocations. Recommended by Sir C. Hastings and Dr. Bell Fletcher. Voted £5.

IV. The widow of a medical man in Herefordshire, having to support three small children. Recommended by Dr. Lingen and Mr. Griffiths. Voted £10.

V. The widow of a medical man who practised in London, aged 73. She is infirm, in bad health, and in poverty. Recommended by Mr. Self and Mr. Booker. Voted £10.

VI. The two daughters of a medical man who practised in Berkshire, and died last year, leaving both unprovided for, and both suffer from ill health. Recommended by Mr. Wheeler and Mr. H. B. Evans. Voted £5, with the promise of further aid for assistance in emigration.

VII. The widow of a medical man in Hertfordshire, who died two years since, leaving his widow and four children unprovided for. Recommended by Mr. Shillitor, Mr. O. Foster, Dr. Glass Black, etc. Voted £20.

VIII. The widow of a late annuitant, who left his wife and three children in a state of poverty. Voted £10.

The Treasurer reported, that on the 1st of July, 1853, the balance due to him was £22:2:6. Since that time, the receipts have been £181:16 in subscriptions, and £50 in donations. The payments had been £26:4:8 for postage stamps, and £192:2 in benevolent aid, making together a sum of £228:6:8,—there being a balance due to the Treasurer of £36:10:8.

ORIGINAL COMMUNICATIONS.

THE IATROMETEOROLOGY OF HIPPOCRATES.

By ALFRED HAVILAND, Esq.

PART II.

We now come to a subject, which perhaps, at this present time, will more directly interest us, namely, "The Pestilential Constitution" of Hippocrates (*καταστασις λοιμώδης* of Galen). We shall find, on comparing the atmospheric phenomena, grouped under the above title, with those prevalent at different times, when this and other countries have been visited by plagues and other destructive epidemics, many interesting points of resemblance, which, until placed side by side, would fail to strike the observer as features significant of a strong family likeness between one epidemic constitution and another. These features modified, as those of the human race are, by climate, yet preserve the grand characteristic outline; so that it is not difficult to recognise them, when we consider all the sources of modification.

INTRODUCTORY REMARKS: CLIMATE OF GREECE.

The climate of Greece is mild; and, if we consider the difference between the several constitutions pourtrayed in "the epidemics", we must also call it variable, which undoubtedly it is. It is mountainous, and of course many of its cities and villages have a variety of aspects; and hence it is that we find Hippocrates particularly explicit upon this point: for instance, he says, "Those (cities) that lie looking towards the rising of the sun, are naturally more healthy than those exposed to the north, even should there be but the distance of a stadium (606 feet 9 inches English) between them. In the first place, the heat and the cold are more moderate; the inhabitants are more blooming in complexion, and not so subject to disease; their voice is clear; they are of a more lively turn of mind and disposition than those in the north." "A city so situated enjoys, on account of the moderate heat and cold, a climate resembling spring. The diseases are less numerous and not so violent, and resemble those that prevail in cities exposed to warm winds. The women are extremely fruitful, and bring forth their children with little difficulty." Again, in the same treatise, a little further on, he speaks of those towns that are exposed to the west, and which are sheltered from the east, but are affected by the warm winds, as well as the cold ones from the north, as very unhealthy; and a place so situated has a climate resembling autumn, because the difference in the same day is very great between morning and evening. He observes that the inhabitants are apt to lose their colour, and that they have deep and hoarse voices. (*Περὶ ἀέρων, ὑδάτων τε καὶ τόπων.*) The mountains of Greece are not very lofty, Mount Guiona, in the Pindaric range of Alps, being the culminating point of Greece, its height is only 8,240 feet. None, therefore, are perpetually covered with snow, although it remains on them for some time after the spring has passed into the summer. The winter is said not to last really more than two months. The summer is generally hot, and the thermometer often indicates a temperature above 100° Fahr., which, however, is modified and rendered more tolerable by the sea breezes. During the summer, there is hardly ever any rain, and the small rivers, streams, and brooks, become dry; the sky then becomes cloudless, sometimes for weeks together; the Etesian winds, springing up a little before the dog-days, have the effect of tempering and cooling the air. The Etesiæ are northerly winds, whose home, according to the ancient poets, was the land of Thrace. Thus Horace speaks of them—

> "Jam Veris comites, quæ mare temperant
> Impellunt *animæ* lintea *Thracæ*. (*Car.* iv, 12.)

This serene sky and the gentle Etesian winds, however, disappear soon after, or sometimes before, the harvest has been gathered in; the empty channels then become filled with rain, which falls suddenly in torrents, and, as in many parts of England, large tracts of land are inundated in

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consequence; the land covered being badly drained, the water remains stagnant, and then the heat of the succeeding summer, acting upon the sodden and decayed layer of vegetable matter, creates in these marshy wastes the most pestilential emanations, which produce a host of diseases.

"Macies et nova febrium
Terris incubuit cohors." (Hor. *Car.* i, 3, 30.)

Of the effects of marsh miasma Hippocrates was well aware; he instances the Phasians, whose country is marshy, hot, wet, and woody (ἡ χώρη ἐκείνη ἑλώδης ἐστὶ καὶ θερμὴ καὶ ὑδατεινὴ καὶ δασεῖα) (*op. cit.*), and subject to showers at all seasons: he gives a graphic description of their fruit and the people themselves, whom he describes as pale, bloated, indolent, and unwieldy, with deep voices (φθέγγονται τε βαρύτατον ἀνθρώπων), which he attributes to the misty air that they breathe. The fruits, he remarks, are cramped in their growth, and as it were effeminated (τηθηλυσμένοι). Greece is situated in the middle of a region that is constantly subject to earthquakes, and the effects of active volcanoes; and we shall see in the sequel what a remarkable relation these telluric phenomena bear to the various epidemics that have visited this earth. Again, its distance from Egypt, where the plague is by some considered to be endemic, is so short, that a south-easterly wind would soon bring the dreaded scourge to its shores, either in a modified or unmitigated form. Thucydides (Θουκυδίδου b. 47), in his masterly account of the plague at Athens, traces it from that part of Æthiopia that lies above Egypt and Libya, to Persia, Lemnos, the Pirœus, and Athens. It appeared in the winter of the second year of the Peloponnesian war, which was the second or third year of the eighty-seventh Olympiad, B.C. 430; Hippocrates was then probably about thirty years of age. As it is doubtful whether the plague is really generated in Egypt, I do not desire here to lay it down as a fact, but rather refer to it as an opinion held by the ancients, and not altogether discarded by the learned of the present day. With this introduction, I shall now proceed to make some remarks on the table, in which I have grouped all the characteristic meteorological phenomena mentioned by Hippocrates as having been observed during the fatal year, whose melancholy history he has so well and beautifully told.

Pestilential Constitution. (Κατάστασις Λοιμώδης.)

Season.	Rain and moisture.	Wind.	Temperature.	Cloud.	Snow.	Diseases, remarks, etc.
Autumn. Περὶ ἀρκτοῦρον. A few days before the *Autumnal Equinox.* Φθινόπωρον.	Much rain. ὕδατα πουλλά. Abundance of wet. ὑδάτων πλήθεα.	South. ἐν νοτίοισι.		Gloomy and cloudy. σκιώδεα, ἐπινέφελον.		
Winter. Χειμών. After the *Solstice* and near the *Equinox.* Μετὰ δὲ ἡλίου τρόπας ὕστερον πολλῷ, πλησίον ἰσημερίης.	Damp. ὑγρός.	Southerly. νότιος.	Mild. μαλακός.			Consumption commenced in many cases.
About the *Equinox.* Περὶ ἰσημερίην.		Northerly. βόρεια.	Much winterly weather. ὀπισθοχειμῶνες.		Snow, that lasted no long time. χιονώδεα οὐ πολὺν χρόνον.	Causus and phrenitis were prevalent now just as the cold weather set in.
Spring. Ἦρ.	Much rain until Dog Days. ὕδατα πουλλὰ διὰ τέλεος μέχρι κυνός.	Southerly and calm. πάλιν νότιον ἄπνοον.				A dreadfully malignant epidemic of *erysipelas* (ἐρυσίπελας) reigned, which seized all kinds of cases; and was both traumatic and idiopathic. It destroyed the skins, tendons, and bones: all parts of the body suffered: limbs were laid bare, and were said to drop off. Legs, arms, groins, chest, and sides, were all laid bare. The mortality was great.
Summer. Θέρος.		Southerly and calm. νότιον καὶ ἄπνοον.	Hot. Θερμόν.	Serene, fine. αἴθριον.		*Erysipelas* continued. *Carbuncles* (ἄνθρακες), *putrefaction* (σῆψ), and all kinds of *fevers, pharyngeal affections, ecthymata, herpetic eruptions,* and *cholera.* This season was most favourable to *consumptive* cases.
		The Etesian winds blew slightly and irregularly. Ἐτησίαι σμικρὰ διεσπασμένως ἔπνευσαν.	Much suffocating heat. πνίγεα μεγάλα.			
			Suddenly hot. ἐξαίφνης θερμόν.			
Autumn. Περὶ ἀρκτοῦρον.	Much rain. ὕδατα πουλλά.	Northerly. ἐν βορείοισι.				*Erysipelas* continued. *Consumptive* cases terminated fatally. Those for instance who were seized in the preceding winter died. During the Pleiades many of these cases were cut off.

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We find, on referring to the above table, that four out of the five seasons which it comprehends are characterised by copious rains, dampness, southerly wind, cloudy sky, and a gloomy state of the atmosphere; and that, after the winter solstice, the weather, instead of being fine and clear, was winterly and out of season, and thus ushered in the spring, which, in this pestilential year, had such an awful catalogue of diseases against it.

I will now analyse the table; and, in doing so, I think it would be the best plan to discuss the several phenomena separately, instead of treating them generally.

This year was remarkable for its *moisture* and the *southerly* direction of the wind. Ἔτος νότιον, ἐπομβρον. (*Epid.* iii, 3.)

The South Wind. The table shews at a glance that this direction of the wind was prevalent during the preceding autumn and early part of the spring in which the epidemics appeared. This south wind perhaps had much to do with the pestilential character of the year; and we see, on comparing the tables of the second and third constitutions (No. xliv, pp. 962-3, of this JOURNAL), that in those years the *north wind* was the prevalent one; and even in the first constitution, where there is the appearance of a southerly tendency, yet that year was preceded by an opposite or northerly state of the weather. (See bottom of p. 961.) It must be remembered that the Etesian winds are northerly. The south wind hardly ever gets a good epithet either from the poets or prose writers of ancient times. Aristotle says of it, that it is a moist and heavy wind (ὑγρὸς γὰρ καὶ βαρὺς ὁ ἄνεμος. Lib. viii, Hist., cap. xv); and Pliny uses nearly the same words, "Austro humido scilicet et graviore vento" (Lib. x, 33). Horace calls it "plumbeus Auster" (Ser. ii, 6); and Galen (Vol. xvi, p. 407, ed. Kühn) derives very correctly its Greek name, Νότος, from the fact of its carrying moisture, νοτίδας ἐπιφέρει; and this etymology is borne out by Liddell and Scott, who say that there was an original notion of *moisture* in the word, from its derivative, νοτὶς, moisture, etc. Homer, a true observer of nature, describes it as being the cause of the mist that occasionally envelopes the tops of mountains.

Εἵτ' ὄρεος κορυφῇσι Νότος κατέχευεν ὀμίλλην. (*Il.* iii, 10.)

I will endeavour to trace the south wind in its various relations to the epidemics both of the countries on the northern boundary of the Mediterranean, and of the western parts of Europe.

The plague is said to be endemic in Egypt; and Fodéré, in the *Dict. des Sc. Méd.* (vol. xli, p. 87), says, "that there only is it engendered; and that in other regions it is always an alien"; and it will be found related by Dr. Joseph Browne, in his able article on the Plague (*Enc. of Med.*, vol. iii, p. 332), that "the vernal equinox is the period of the greatest fatality of the disease (plague). About this time, we learn, *southerly* winds blow with great violence; they last ordinarily three or four hours, and are frequently renewed daily for fifty successive days. They are very warm, passing over the burning deserts which border Egypt on the south, and they are moreover loaded with putrid emanations exhaled from the animal and vegetable substances which are decomposed in the lakes formed by the retiring of the waters of the Nile, or in the cemeteries which its inundations have reached." Such being the starting point, should the wind prevalent in Greece and in the northern regions above it have a southerly tendency, this pestilential south wind would find no difficulty in blasting with its poisonous breath the inhabitants of the Mediterranean isles and their northern neighbours. Thucydides, as we have seen above, in his account of the plague at Athens, traces it in a south-west direction to Persia, and thence in a south-east to the island Lemnos, after which it attacked the Piræus and Athens.

But we must not draw too hasty a conclusion with regard to the wind being the means of conveying epidemics from one country to another; although, combined with the presence of other causes of disease, it might be instrumental in bringing about a pestilential state of the atmosphere; yet, for the spread of the plague and other epidemics, we must look to the communication that takes place between one nation and another for the most important means of propagation. On this subject, Hecker remarks, in reference to the great plague of 1348 (Syd. Soc. ed., p. 19), "The corruption of the atmosphere came from the east; but the disease itself came not upon the wings of the wind, but was only excited and increased by the atmosphere where it had previously existed. This source of the black plague was not, however, the only one; for far more powerful than the excitement of the latent elements of the plague by atmospheric influences was the effect of the contagion communicated from one people to another, on the great roads, and in the harbours of the Mediterranean. From China, the route of the caravans lay to the north of the Caspian Sea, through Central Asia, to Tauris. Here ships were ready to take the produce of the East to Constantinople, the capital of commerce, and the medium of connexion between Asia, Europe, and Africa. Other caravans went from India to Asia Minor, and touched at the cities south of the Caspian Sea; and, lastly, from Bagdad through Arabia to Egypt; also the maritime communication of the Red Sea, from India to Arabia and Egypt, was not inconsiderable. In all these directions, contagion made its way; and doubtless Constantinople and the harbours of Asia Minor are to be regarded as the foci of infection, whence it radiated to the most distant seaports and islands."

To return to the *south* wind, we must consider it more as the cause or concomitant of warm mild weather, than as being really pestilent *per se;* and from this point of view must we study it. With the *south wind*, therefore, have we associated *heat* and *moisture;* the former of which, according to Galen, is the active, and the latter the material cause of all putrefaction. Throughout the writings of the many distinguished physicians who published essays on the plague, sweating sickness, epidemic catarrh (influenza), etc., we find several valuable meteorological observations, which will be interesting in this place, and tend to show that, however varied the symptoms and signs of an epidemic may be, yet there is a certain constancy in the appearance of certain atmospheric phenomena. We must again refer our readers to the above table, whilst we enumerate a few of the innumerable interesting facts recorded in the history of epidemics.

The first visitation of the sweating sickness in England was in the beginning of August, 1485 (time of battle of Bosworth, fall of Richard III, and elevation to the throne of Henry VII); and it will be remarked, that the years from 1480 to 1485 were *wet* years. (It was swept away Jan. 1st, 1486, by a south-east wind.) The *humidity* of the year 1485 was remarkable, says Hecker, throughout the whole of Europe; the *rain* fell in torrents, and *inundations* were frequent. He observes, that "*damp* weather is not prejudicial to health, if it be merely temporary; but if the *rain* be excessive for a series of years, so that the ground is completely saturated, and the *mists* attract baneful exhalations out of the earth, man must necessarily suffer from the noxious state of the soil and atmosphere, which under these circumstances must inevitably follow." (p. 187.)

The second visitation of the sweating sickness took place in 1506, and this was preceded by the *wet* summer of 1505, followed by a severe winter. In 1510, the influenza broke out, which, according to Dr. Short, had for its precursor "a long *moist* air." The appearance of this epidemic in 1557, was after the prevalence of continued *wet* weather, of which the same author writes:—"1557. This year and last was a great scarcity of corn from the *past great rains*. It was a very unseasonable year in England, all the corn was choked and blasted, the harvest excessively *wet* and *rainy*." There were also ill-smelling fogs at the time. In short, to quote the summary from Dr. Theophilus Thompson's compilation from the authors on Epidemical Catarrh, we find that the visitation of 1580 commenced in October, after a cold dry wind, preceded by two or three years of "a *moist, rainy, southerly* constitution. That of 1675,

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after a pungent fog, and cold *moist* weather. In 1710, it reappeared "during a *moist, southerly* constitution"; in 1729, "after a *rainy* November, with *high tides*"; in 1732-3, "during a *damp*, chilly spring, *southerly* and fetid fog". In 1737-8, the influenza commenced in November, when Huxham says, "a southerly wind indeed *damped* the month". In 1743, "during the three months preceding the attack of influenza, the atmosphere was for the most part *moist* and *damp*, and a stinking fog in January". Dr. Millar observes, with regard to the epidemic of 1758, that "the October was very cold and *moist*, and that a great quantity of rain fell". In 1762, Dr. Pretty observed that after the droughts, there "were great *gluts* of *rain*". The influenza of 1775 "prevailed during a *wet* autumn". In 1782 it appeared after the summer in 1781 having been very dry, the autumn very *rainy*, the spring of 1782 remarkably late, then gloomy, cold and *humid*, with occasional dry fogs and peculiar *storms*". During the epidemic of 1803, the three months February, March and April were for the most part cloudy, *showery*, foggy and *rainy*. The epidemic of 1836-7 succeeded "disastrous gales, the drifting of the snow, and the *floods* by the thaw". Such are the facts in connexion with influenza, and we should find, were we to search throughout the annals of Epidemics, that *moisture of the atmosphere* has ever been as a general rule, either their immediate or remote cause.

Droughts (Αὐχμῶν δὲ γενομένων τοὺς ὑπὸπροσθεν χρόνους) are stated to have prevailed in the year preceding the one under discussion, and it is remarkable that many epidemics have occurred after very dry seasons; for instance, the plague of 1541 at Constantinople, succeeded to the *drought* in 1540; and Hecker (p. 12) speaking of the plague in China of 1334, writes—"Here a *parching drought*, accompanied by famine, commenced in the tract of country watered by the rivers Kiang and Hoai; and this", he adds, "was followed by such violent torrents of rain in and about Kingsai, that more than 400,000 people perished in the flood". Again—"In Tche, after an unexampled *drought*, a plague arose which is said to have carried off 5,000,000 of people".

The calm that prevailed throughout this pestilential year is another epidemical characteristic (ἄπνοια διὰ τέλεος). This state of the air has been observed during the prevalence of cholera. Mr. J. A. Hingeston, in his highly interesting paper relative to cholera in this JOURNAL, Oct. 21, 1853, lays stress upon the fatal *calm* that reigned during the visitation of the cholera in 1832. Conjoined with this fearful atmospheric *stillness* was that seemingly interminable *mistiness* that was suspended for such a length of time over our ill-fated island. Mr. Hingeston says, that the weather was *gloomy* and *cloudy*, and this characteristic seems to be intimately associated with the *calm*. Hippocrates observed the same phenomena, and noted them down in his description of this pestilential year. (Φθινόπωρον σκαῦδες, ἐπιφέλιον.) Amongst many other remarks, Mr. Hingeston observes that, in 1832, "the weather was *gloomy* and *cloudy*", and during the cholera in this year, "that the barometer was high, the sky *overcast*"; "a *calm* prevailed". In 1849, he says that there were sixty *misty* days between 1st January and 31st August, *i.e.*, one fourth of the whole". And from his observations made this year at Newcastle, he finds "that the cholera was the worst when the barometer was highest and the atmosphere the *calmest*.* There was on this occasion, as on former ones, a certain *grey mist*, which painters express by the word *scumbling*"; and further on, he says, "although it is remarkable that the atmosphere is, during the prevalence of cholera, at once both *calm* and *overcast*, and the roads dry, if not dusty, yet there is a sticky moisture that pervades every thing". This graphic description entirely coincides throughout with my own observations made when Bridgewater was visited by the cholera in 1849. Homer, in his short account of the plague with which Apollo afflicted the Greeks, in answer to the prayer of his priest Chryses, remarks that it was ushered in by a *gloominess* resembling night.

ὁ δ' ἴε νυκτὶ ἐοικώς. (*Il.* i, 47.)

In the above remarks mention has been made of *stinking fogs* as coincident with several epidemics; and although it will not do for us to enter upon this subject, inasmuch as it strictly does not belong to our text, yet in connexion with it we may mention that certain epidemics have been supposed to have had a peculiar *scent* belonging to them. Lord Bacon, for instance, states that, "the plague hath a *scent* of the smell of a mellow apple". When the cholera visited this town in 1848, I myself could smell, on coming into the town from the country, a peculiar sickly odour; and I found that it was always more powerful in those districts of the town where the epidemic raged most, and it was often, to my sense at least, almost intolerably strong when three or four cases were huddled together to die in one room. As the disease shifted from one quarter of the town to another, I often observed the presence or absence of this sickening effluvium. Moreover, on being called to a patient suddenly, and of whose disease I had not been apprised by the messenger, on entering the room, and sometimes on going up stairs, this peculiar odour has often led me what to expect. I have also heard it related by Capt. Gordon, who had lived in India for many years, that during a long journey on horseback with some brother officers, they were dissuaded from baiting at a certain station, although fatigued, because one of the company recognised a "smell" that he remembered to have observed in a cholera hospital some very long time before; without making any inquiries, they pushed on to the next station, and then were informed that the cholera was raging fearfully at the one that they had just passed through. Such a fact as this of course tended to confirm their belief that the cholera really has a peculiar odour attendant upon it, for none of the party were aware until then that this disease was in the district at all.

Comets, Meteors, Volcanic Eruptions, and Earthquakes. Dr. Francis Clifton, in his preface to his edition of the *Epidemics, etc., of Hippocrates*, alludes to a *comet* that is mentioned in *Epid.* lib. iv., p. 523, ed. Kühn, and which was followed by an *earthquake* (ἥλιον χειμερινέων τροπέων ἄστρον οὐ σμικρὸν, πέμπτῃ δ' ὕστερον ἐκάστων σεισμὸς), but we must not suppose that these phenomena, although frequently coincident with epidemical diseases, happened in the pestilential year that we are now studying. Mr. Machin, Professor of Astronomy at Gresham College, and Secretary of the Royal Society, informed Dr. Clifton that there were two *comets* in the days of Hippocrates, and both of them attended by an *earthquake;* the first appeared in the winter solstice, 2nd year of the 88th Olymp., B.C. 427, and therefore in the 33rd year of the age of Hippocrates. See *Arist. Meteor.*, cap. 6, lib.; and the other, called by Aristotle ὁ μέγας κομήτης, also appeared at sunset in winter and was attended by an *earthquake*, and the inundation of Achaia, 4th year 101st Olymp., B.C. 373, and 87 of Hippocrates' age. We will now proceed to give a few instances wherein the above phenomena were either singly or collectively coincident with certain remarkable epidemics. On reading the fourteenth chapter of the book of Zechariah, we find that he prophesies that an *earthquake* shall precede the plague, which he foretold should destroy the enemies of Jerusalem. And again, in the Gospel of the physician, St. Luke, we find in the xvi chap. and 11th ver., "And great *earthquakes* shall be in divers places, and famines, and *pestilences*". When the plague broke out again at Athens in the winter of the fifth year of the Peloponnesian war (Thucyd. lib. iii., § 87), Thucydides mentions that it was followed in the succeeding spring by *earthquakes* which prevented the annual invasion of Attica, σεισμῶν δὲ γενομένων πολλῶν ἀνετράπετο πόλις, καὶ οὐκ ἐγένετο ἐσβολή, § 89. Dr. Theophilus Thompson, the editor of the *Annals of Influenza*, remarks that *comets* repeatedly attracted attention about the time of catarrhal epidemics, especially near the visitations of 1510, 1557, 1580, 1732, 1737, 1743, and 1762.

* In my observations on ozone, I have found as yet that its absence from the atmosphere is almost in a direct ratio to the stillness of the air.

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Hecker, in his history of the *Epidemics of the Middle Ages*, mentions that *comets* were seen in 1505 and 1506, and that an *eruption* of Vesuvius took place in 1506, the year of the second visitation of that dreadful scourge the sweating sickness. 1505 was also the year of the petechial fever of Italy; coincident with the third visitation of the sweating sickness in England in 1517, there was an *earthquake* felt most seriously at Tubingen, Nordlingen, and Cala, during a violent storm in which 2000 houses and a church were destroyed at Nordlingen; a great *comet* appeared in 1516 (Wintzerberger, fol. 21, *a* and *b*). This year, 1517, was also one in which the *hauptkrankeit* (encephalitis) occurred as an epidemic in the central part of Europe. At the same time there also broke out in Holland an unnamed but dreadful disease which destroyed many, and was somewhat identical with pharyngeal croup, and in the same year the small-pox and measles were conveyed by Europeans to Hispaniola, and committed dreadful ravages. In the year 1529, 25th July, the sweating sickness broke out for the fifth time, and was contemporary with the Trousse-galant in France. *Comets* appeared according to Bona, p. 143 (a girl dying at Lubeck of fright at this meteor). Hecker says, "comets appeared in the course of this year in unusual number", p. 248. One in August 1527, a second in July and August 1529, and a third (Halley's) in 1531, visible in Europe from the 1st of August to October 3rd. This was the one that returned in 1835, its revolutions comprehend between seventy-five and seventy-six years, it having appeared in 1155, 1230, 1305, 1380, 1456, 1531, 1607, 1682, 1758, and 1835, and may be expected again in the year 1910. Fearful *earthquakes, fiery meteors*, and *terrestrial commotions* of all descriptions preceded the plague of 1348. Similar coincidences might be brought forward, but our limits will not admit of the enumeration of more facts bearing upon this subject at present.

Pestilential Type. We find in the account before us of Epidemic Erysipelas, that most other diseases degenerated into this prevailing one, and this remark is borne out by what has been observed by others. Thucydides, for instance, says of the plague at Athens "that the year was admitted as the healthiest and most free from other diseases; but, if any one had a previous illness, it always determined in this alone; *εἰδέ τις καὶ προέκαμνέ τι, ἐς τοῦτο πάντα ἀπεκρίθη*". Thucyd. ii, 49. This fact has been long observed and is now undisputed. The remark of Dr. Cormack (ASSOCIATION MEDICAL JOURNAL, Nov. 11th, 1853, p. 983), speaking of cholera, "that during the might of the epidemic, the choleraic type was impressed on all diseases, or that there was nothing to be seen except choleraic diseases", is pertinent to this subject.

I fear that this paper has been extended beyond the patience of my readers; but those who take a real and thorough interest in our science will see what I have desired to accomplish in it. With regard to the epidemic that was the scourge of the year under discussion I shall now say nothing, but merely refer the reader to the Table, where he will find an outline of a most dreadful form of epidemic erysipelas, besides fever, etc., which prevailed throughout Greece at the same time.

In this sketch many things have been omitted, that many would desire to have seen introduced; my apology must be, however, not a want of will to enter more into detail, but rather a desire not to weary my readers. We have seen that Hippocrates' observations were a true and faithful portrait of a year that was remarkable for a fearful epidemic; and we are now able to judge, from comparison with others, how strong a likeness there is between the group of phenomena that then obtained, and those which have been described by later authors.

Bridgwater, February 1854.

DESCRIPTION OF A BOX FOR OZONE OBSERVATIONS.

By C. LEESON PRINCE, Esq.

I FORWARD for insertion in the ASSOCIATION JOURNAL my plan of a box for ozone observations, which, after a fair trial of nearly three months, I find to answer every purpose admirably. I am encouraged to request its publication, in consequence of a letter which I have received from Dr. Moffat, and from which the following are extracts.

"The box I had constructed according to your plan for ozone observations I have had on trial for four weeks, and I find it possesses all the requirements for uniformity of results." And at the conclusion of his letter, he says: "I hope, for the sake of uniformity, all who engage in the investigation of atmospheric ozone, will use a box constructed according to your plan."

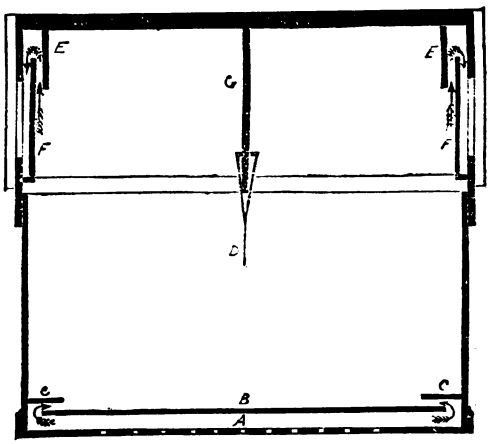

Fig. 1. Longitudinal section.—A. Bottom. B C. False bottom. D. Paper hung between two slips of deal. E F. Screens. G. Middle partition to support the lid.

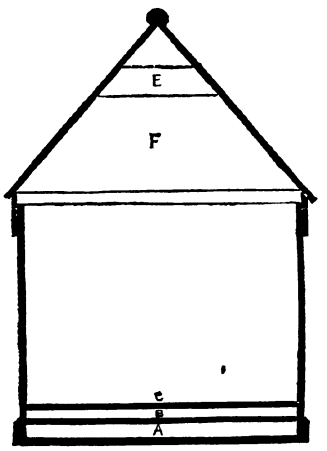

Fig. 2. Transverse section.—References as above.

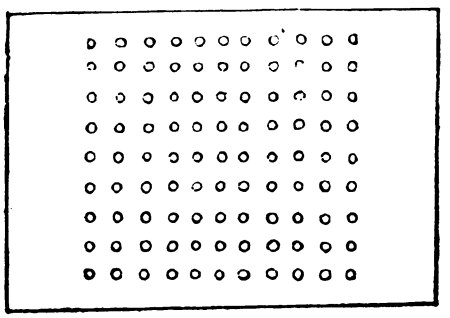

Fig. 3. Plan of bottom.

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