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ARTICLE V.

An Essay on the Adaptation of Climate to the Consumptive, for a permanent residence; embracing an Examination of the Climate of certain localities of frequent resort; and also, an Investigation of the degree of adaptedness of the Pacific Climates of the United States. Presented to the Medical Society of the State of Georgia, at its annual meeting, held at Atlanta, April 13th, 1859. By WILLIAM HENRY DOUGHTY M. D., of Augusta, Ga. (Ordered to be printed.)

(Continued from December No., Vol. 15. page 822.)

A COMPARISON OF THE ENTIRE PACIFIC COAST, WITH THE STATE OF FLORIDA, ADOPTING THE MOST ELIGIBLE LOCALITIES OF EACH, WITH THE VIEW OF SHOWING ITS GREATER ADAPTEDNESS AS A RESORT FOR THE CONSUMPTIVE.

The parts of this continent—the subject of the present comparison—are so extremely unlike in their relation to the continent at large, and are possessed of such antipodal topographical features, as to render it somewhat difficult so to arrange them, as to ensure to each a proper exposition of its meteorology. They differ not only in the relation which each sustains to the entire mass—the one running parallel with its general arrangement, and extending over seventeen degrees of latitude; the other, being the projecting, fragmentary terminus of its largest slope—but also in their own general structure, their geological formation, and in their physical connection with the adjoining seas. Florida has a flat, level surface; is doubtless of recent geological formation; has a porous, sandy soil, intermixed with a rotten limestone, in its northern and interior parts; and is but little above the level of the sea. The Pacific coast is the rapid decline of a lofty mountain range to the Pacific Ocean, whose rough and serrated edge bears testimony to the constant lashing of the waves for ages, and comprises a narrow strip of nearly uniform dimensions throughout.

Florida, by means of its narrow pointed extremity, juts out into the ocean depths, occupying a part of the angular space made by the Gulf Stream in its escape into the Atlantic from its mother waters, and thereby exposes its eastern, southern, and the greater part of its western boundaries to the corroding influence of the Atlantic Ocean and its great inlet, the Gulf of Mexico. The Pacific coast has only a western boundary of water surface. Florida, again, is exposed on its southern and western sides to the uniformly high temperatures of the Gulf, whilst on its eastern it has the low temperatures of the Atlantic, interposed between it and the Gulf Stream, so that the local climates of the two coasts are made to differ in their sensible characters. The Pacific coast, however, is subjected to such changing sea-temperatures as tend to the production of a general uniformity of its temperature condition.

Finally, Florida is eminently exposed to the full action of both marine and continental influences, whilst the Pacific coast is accessible to the former only, and is almost effectually protected from the harsher impressions of the latter. Every impulse that affects the eastern portion of the United States may be transmitted to the former, and mark its climate with its own harsh features; but at the latter, the treasured influences of the mild Pacific, aided by the great interior mountain barriers, sensibly mitigate, if they do not entirely counteract, all injurious impressions originating towards the mass of the continent.

In the coming comparison, we shall disregard our usual method, (that of comparing the individual seasons with each other) and make an arbitrary division of the climatic year into two periods, which we propose to designate as the period of heat, and the period of cold. The period of cold is intended to embrace such months as are characterized by low temperatures, including also, those which manifest the earliest and latest depressions. The period of heat is necessarily embraced in those months which have an uninterrupted course of high temperatures. The first, then, will extend from October to March inclusive, and the second

from April to September inclusive. As applied to Florida, this division may seem somewhat strange, but we trust that its advantages will sufficiently appear in the progress of the comparison. To say nothing of the exhibition of the high and low temperatures, coincidently and concurrently, it is still farther advantageous, in that, it causes the length of time embraced at Florida, to conform to the leading natural divisions of the climate of the Pacific coast—the wet and dry seasons.

The special investigations which have been made of the State of Florida, in most cases, undertaken with the view of testing its agricultural capacity—more particularly in reference to the proposed introduction of tropical fruits—demonstrated, at the same time, the most important practical features of its climate. Thus the parallel of 28° was fixed as the most northern point at which tropical fruits could possibly flourish, and hence arose a division of the peninsula into tropical or southern, and northern Florida. Its climate is usually referred to by means of its geographical divisions, namely, East, West and Middle Florida; this, however, is obviously wrong, since at least one-half of its area (from lat. $29^{\circ} 30'$ southward) could not be included under either head. Again, we find it referred to as that of the interior, and of the coast; but this, to us, seems a needless degree of minuteness, since, if the entire extent of its sea-shore parts, together with the peculiar investment of the whole by the sea be considered, no interior, strictly speaking, can be said to exist. Although, so far as the mere distinction of some unimportant local differences is concerned, it may be admitted. We shall adopt, as best suited to our present purpose, the first of the divisions mentioned—a northern and southern part—still retaining, however, for convenient reference, the subdivisions of the northern. Of these, we shall use only the northern division in the comparison—the southern, because of its tropical features—high heat, great relative humidity, and profuse precipitation—being conceded to be positively hurtful to those whose benefit is sought by it. Nevertheless, inciden-

tal deferences may be made to certain of its posts, situated in its most northern part.

We have selected, as proper points for comparison for this State, Fort Marion, at St. Augustine, on its eastern coast, lat. $29^{\circ} 48'$; Fort King,† in lat. $29^{\circ} 10'$, nearly midway between its eastern and western coasts; and Fort Barrancas,* near Pensacola, on its extreme western, lat. $30^{\circ} 18'$. On the Pacific coast, we have chosen those of San Diego, San Francisco, and Fort Vancouver, whose topographical relations have already been given.

Special Comparison.—The difference of the successive months:

	Mean of April.	Advance from						
		Ap. to M ^y	M ^y . to Ju ⁿ	Ju. to J ^y	J ^y to A ⁿ	A ⁿ . to S ^p	S ^p . to O ^c	
San Diego, Cal., (5 years)	61° 23	1° 44	4° 72	5° 33	0° 96	-2° 81	-5° 37	
San Francisco, " 4 "	55° 37	-0° 08	†1° 57	†1° 04	-0° 68	†1° 04	-0° 35	
Ft Vancouver, " 5 "	52° 55	6° 40	3° 72	6° 04	-3° 15	-4° 75	-7° 51	
" Marion, Fla., 20 "	68° 78	4° 72	5° 86	1° 54	-0° 34	-1° 96	-6° 72	
" King, " 6 "	71° 41	4° 98	3° 39	1° 02	-0° 71	-1° 91	-7° 62	
" Barrancas, " 17 "	68° 51	6° 94	5° 35	1° 46	-0° 62	-3° 17	-8° 39	

In consequence of the more southern latitude of the State of Florida, the mean temperature of the month of April must be higher than at any part of the Pacific coast. Nevertheless as great a number of those irregularities, which are common to the eastern United States, and which mark the distribution of heat for the spring season, "by great variability in successive years," and "great constant differences of the successive months," are recorded here as at the latter. The two stations upon its opposite shores afford, during this month, the same mean temperature; and in their general advance from month to month, to July, which has the highest mean for the year, display also corresponding rates of progression. The rate of progression is over five degrees from May to June, but from June to July is diminished to one and a half degrees. Fort King, except that the successive differences are not quite so extensive, and an increase in the mean of April of about three degrees, presents a great resemblance to them. The same parallelism is continued in their decline from July, being uniformly

†This post is "about forty miles from the coast of the Gulf of Mexico, and sixty miles from the Atlantic coast. The surrounding country is slightly undulating, alternately sandy pine barrens and marshy hammocks"—Army Met. Register, page 588.

*This post is "exposed to the Gulf," and is "about eight miles southwest of Pensacola."—See same reference.

small to August, and from this month to September, and very rapid to October. It may therefore be stated, that in Florida a rapid, though not uniform advance takes place from the early spring temperatures to the highest summer means, and that the decline from this to the later fall temperatures, is equally irregular and material.

On the Pacific coast, the nearest approach to this record is found at San Diego and at Fort Vancouver; although the latter differ in certain particulars, materially from each other. San Diego has an irregularly increasing monthly advance to the highest monthly mean, which is here postponed until the month of August. It differs from the Florida posts as to the periods at which the greatest advances take place. Here in the commencement of the series, the smallest rates are given, and they increase so rapidly that the advance from May to June is three times the first, and from June to July, it is nearly four times as great; whilst at the others, these features are almost completely reversed. In other words, the principal increase of temperature occurs at San Diego, in the passage from May to July, and in Florida from April to June, thus anticipating the former one month. Furthermore, although the decline at this western post, from August to October, appears to begin with larger measures than at either of the others, yet the actual amount of decrease does not equal them—there being at the former a total decrease of $8^{\circ} 18$, and at the latter an average decrease of $10^{\circ} 48$. But of the Pacific stations, that of San Francisco affords the most remarkable and signal differences, as well as superiority over those of Florida. Here the mean of April is thirteen degrees (13°) below the lowest of the others, and sixteen degrees (16°) less than the highest; and from this to the culminating point of the dry season, the greatest difference between any two succeeding months, is only $1^{\circ} 57$. Here, also, the monthly mean temperatures continue to increase at this gradual rate, to September, thus extending the period of heat two months farther than in Florida; and the whole amount of augmentation of temperature, during the entire

period from April to September, as evidenced by the difference of their means, is only $2^{\circ} 89$. May, instead of giving a mean from $4^{\circ} 72$ to $6^{\circ} 94$ above that of April, declines slightly from it; and June only increases over May, so far as to exceed the mean of April by $1^{\circ} 49$; from June to July, the increase is only $1^{\circ} 04$, whilst August retreats so far from July as to make its mean only $0^{\circ} 36$ higher than that of June; and finally, September gives a mean of $1^{\circ} 04$ above that of August, but only $0^{\circ} 36$ over that of July. The entire period of a declination of temperature occupies here a single month, and amounts to only one-third of a degree. By this nominal decline, the month of October presents the same mean that July has. Hence an unparalleled uniformity of temperature condition exists here from April to October. At other places on the coast of California, similar, though not identical results are manifested; and for some degrees of latitude, both northward and southward of San Francisco, a corresponding uniformity is observed, so that the advance of temperature during the summer, amounts to only "one degree for one hundred and twenty miles northing."

In conclusion, Fort Vancouver, the most irregular and extreme of the Pacific posts, corresponds more nearly to those of Florida. They resemble each other, both in the amount, the irregularity, and the rapidity of the advance of the heat, and in the length and extent of its declination: although higher means are necessarily recorded at the latter than at the former.

2d. THE GENERAL RANGE OF THE MEAN TEMPERATURES.

	April		May		June		July		August		September		Mean Range for the Period.
	Ht.	Lt.	Ht.	Lt.	Ht.	Lt.	Ht.	Lt.	Ht.	Lt.	Ht.	Lt.	
San Diego, California...	63°	71°	57°	71°	60°	72°	67°	76°	73°	81°	73°	82°	5° 91
San Francisco, " ..	59°	62°	54°	45°	50°	57°	53°	56°	53°	50°	47°	45°	4° 35
Fort Vancouver, " ..	56°	61°	48°	43°	50°	53°	48°	43°	46°	41°	38°	34°	4° 36
" Marion, Florida...	74°	85°	82°	67°	71°	82°	75°	82°	85°	76°	80°	76°	8° 86
" King, " ..	74°	81°	68°	67°	50°	84°	85°	71°	83°	70°	75°	74°	8° 39
" Barrancas, " ..	72°	83°	62°	83°	70°	84°	85°	70°	84°	75°	80°	75°	6° 23

The irregular non-periodic distribution of heat for the spring, should constitute in this comparison an important feature, because of its practical nature. Therefore we may be indulged in a few remarks upon a comparison of the range of variability of the mean temperatures of the spring season, before discussing the peculiar merits of the table. "At Fort Steilacoom, for six years, the greatest range is 2° 5," at Fort Vancouver 4° 6, at San Francisco, for four years, 3° 05, at San Diego, for five years, 5° 70. The periods of observation here are much shorter than at Florida; nevertheless, we may remark with Mr. Blodget, that "the measures of variation would, from analogy, be much less" than at any of the eastern posts. The extreme range of the means for the spring, at Fort Marion, is 11° 28, at Fort Barrancas, 7° 05, at Fort King, 5° 42, and at Fort Brooke, in the southern division, 11° 88. Hence, as the author just quoted correctly remarks, "the range in northern Florida and Texas shows a measure of variability in the spring temperatures which identifies these districts with those having continental climates, notwithstanding their high temperature." The superiority of the stations of the Pacific, even to its extreme northern limits, in this regard, over those of the other section, is so evident as to need no further comment from us. In fact, the variability of the Florida posts is so great as to class them not only with continental climates, but

with those possessing in an extended series of years, an extreme continental nature. On the other hand, the Pacific spring climate, as far as we are permitted to apply it in a much more limited series, shows a permanency or rather a uniformity of temperature, unsurpassed probably by any equal extent of sea-coast in the temperate zone.

The same general variability is manifested also in the individual months of the spring, and in some parts of the peninsula, it is true also of those more advanced in the summer and towards the fall. Upon inspecting the foregoing table, these remarks are observed to be true, for Fort Marion presents a range of $11^{\circ} 68$ for April, and $13^{\circ} 75$ for May, and March transcends both of them, having an extreme of $15^{\circ} 51$; and the monthly possible range is continued throughout the summer season at an average of over 7° ; and with the addition of the range of September, it gives, as the mean possible range for the entire period in the table, $8^{\circ} 96$. At this post, the greatest variability of the period is manifested in the month of May, and from this to September it gradually diminishes. At the more central post, however, the greatest measures of variability are not noted in the spring months, but in those of the summer, that of June being the highest for the period. So that the eastern coast and the southern interior, whilst they differ as to the months having the greatest variability, yet resemble each other in the whole measure—the average monthly range for the period being over $8^{\circ} 00$. But farther differences exist between the western coast and both of these, the variation of no single month being equal to the highest of either of the others; on the contrary, the majority of them have, in comparison with the others, a reduced range, thus establishing the fact of a measurably more uniform temperature condition along the Gulf coast. The measures of heat actually experienced at the various places differ also—the eastern coast being somewhat below the Gulf and the interior; this last being also slightly above the former. The causes of these differences are evident in the differing temperatures of the surrounding sea-waters.

The Gulf of Mexico is of high temperature, hence the stations of its coast are elevated to it, more or less; whilst the temperature of the Atlantic waters, which are in contact with the eastern coast, and separate it from the Gulf Stream, are lower in their thermometrical condition, and consequently refrigerate all places having that exposure. "The Gulf Stream," says Mr. Blodget, "is somewhat above the mean temperature of the east coast of the continent in the same latitudes, even in summer, and the isothermals would curve northward rather than southward, in their extension at sea, if no influences other than that stream or the undisturbed sea were encountered. *"There is, however, no point of the coast at which the temperatures of summer are greater for the existence of the Gulf Stream, as the continental influences everywhere predominate under the prevalence and controlling character of the westerly winds."* "The sea-winds and mist are here noticeably colder than the average temperature of the sea itself, at any considerable distance, and exposures open to these have a temperature perceptibly reduced *as far southward as Florida.*" "The cause of this refrigeration is found in the cold masses of water present on the northern part of the coast, or returning in currents next the Gulf Stream, and beneath it." "For most parts of the Atlantic coast, these causes are sufficient only to affect the winds from the northeast, which is the direction covering the largest water surface of this character, and the summer temperatures are reduced by the effect of these alternations, without the production of a decided single extreme, and without the uniformity which characterizes the refrigerating winds of the Pacific." "It is difficult to illustrate this feature by citation of measures of temperatures, *as the depressions appear in the form of two or three days of generally low temperature,** without reaching a single minimum as low as might be attained at an interior station, from the effect of radiation alone." Finally, notwithstanding the differences of the two coasts, the range of the variability is about the same for the period represented, for

*All of these italics are our own.

the extreme range from the lowest to the highest mean here given, is at Fort Marion $21^{\circ} 27$, and at Fort Barrancas $21^{\circ} 69$. Just here we may add, that the difference between the means of April and the hottest summer month, which indicates the usual range for the period, is at Fort Marion $12^{\circ} 12$, at Fort Barrancas $13^{\circ} 75$, and at Fort King $9^{\circ} 39$.

Again, the high means of heat—the extratropical mean temperatures, as they are called—recorded in this State, some of which have been given in the table, might be made a subject of extended remark with us, especially when we bear in mind the humidity of the summer season, its large and heavy precipitations, but we forbear to do so, reserving all observations on this point until we come to contrast their relative states of humidity.

How, now, do the Pacific stations compare with these? The first contrast presented at a general view of them, is the vast difference in the relative position of the various mean temperatures. At San Francisco, the highest mean temperature ever recorded, is below the lowest of either of the stations of Florida, and yet its lowest is only about nine degrees (9°) below that of the others. At San Diego and Fort Vancouver, the very highest recorded means are yet lower, by some degrees, than the ordinary means of the summer months in Florida. At these stations, whose records are far more irregular and variable than that of San Francisco, the possible ranges of those variable months, April and May, at Florida, are much less, and their average possible ranges for the entire period are little more than half as extensive. Nevertheless, the difference between their ordinary mean of April, and that of their highest summer mean, is fully equal to those of Florida.

At San Francisco,* however, the difference amounts to

*The data given for this post in the table differ from those acted upon in the respective tables of the spring and summer season, under the head of the "general range of the mean temperatures." We have used, in the collection of these means, another year's record, 1857, found in the Patent Office Reports for that year. And although it causes some variation from the data of these tables, yet it does not invalidate the materiality of the conclusions drawn; and aiming, as we do, at an equitable and just comparison, and having no preconceived notions to carry out, we have cheerfully made the alterations, as tending to exemplify more fully and correctly the thermometrical history of this part of the Pacific coast.

only $2^{\circ} 89$, and constitutes about one-sixth the natural range of the temperature at the Florida posts. At this post, the maximum range of any individual month is $5^{\circ} 82$, in June; and next to this are the months of April and September, which have a range of 5° and a fraction. The greatest possible range here barely transcends the lowest of the eastern posts, and the average possible monthly range for the period may be taken at about one-half of theirs. At this post, then, by means of the unusual circulation of the Pacific, a permanent refrigeration is kept up, so that a general uniformity of temperature condition is maintained from the later spring months to the second autumnal one. At other parts of the coast, irregular, anti-periodic manifestations may be occasionally seen, but here, and in its vicinity, the constantly existing physical agents prevent their material appearance.

The third point of comparison is the extreme single observations for the individual months.

	April.			May.			June.			July.			August.			Septemb'r.			M P R
	Obs. Pos.			Obs. P.			Obs. P.			Obs. P.			Obs. P.			Obs. P.			
	Ht.	Lt.	R.	Ht.	Lt.	R.	Ht.	Lt.	R.	Ht.	Lt.	R.	Ht.	Lt.	R.	Ht.	Lt.	R.	
	deg	deg	deg	deg	deg	deg	deg	deg	deg	deg	deg	deg	deg	deg	deg	deg	deg	deg	
San Diego, California.....	93	40	53	78	39	39	93	48	45	99	56	43	94	56	38	101	49	52	45
San Francisco, ".....	84	32	42	81	43	38	84	47	37	87	46	41	85	50	35	94	43	51	40
Fort Vancouver, Oregon.....	78	31	47	98	39	59	94	43	51	96	50	46	96	43	53	90	40	50	51
Fort Marion, Florida.....	92	30	62	97	48	49	103	58	45	96	70	26	96	65	31	93	57	35	41
Fort King, ".....	94	44	50	98	44	54	106	60	46	103	64	39	106	55	51	100	54	46	47
Fort Barrancas, ".....	83	38	45	90	47	43	104	62	42	93	67	31	102	58	44	95	47	48	42

The record here given represents, most probably, the absolute position of the single extremes at the posts of Florida, for the period embraced in its formation extends from twelve to twenty years, many of which were characterized in the United States for the extremity of their measures. That of the Pacific stations, on the contrary, is not so reliable, because the period over which it extends is probably insufficient to exemplify the highest and lowest attainable points of the thermometer: The two months of most value in the comparison are those of April and May, and upon inspection, they are at once observed to be more variable in Florida than upon the Pacific. And although "the line of ice and frosts, in April," of the Eastern States, does not generally include within its area the north of

Florida, yet, as irregular, non-periodic temperatures do occur here low enough to form them, and are possessed of great value in a discussion of climate like the present one. And when these occasional low temperatures are recorded in this latitude, they produce, in connection with their usual degrees of heat, a very extensive range of the thermometer. Thus, at St. Augustine the lowest, being two degrees (2°) below the freezing point, and the highest ninety-two degrees (92°), a possible range of sixty-two degrees (62°) is produced. The variability thus signified, not only surpasses that of the Pacific posts, but fully equals the fluctuation of the thermometer at many interior sites farther north. The advance of temperature to May, however, at this place, is so great that the very lowest recorded point exceeds that of April by eighteen (18) degrees, and reduces its possible range to forty-nine (49) degrees. During the summer months, at all of these southern stations, the opposite extreme may be as significant. At Fort Marion, in June, the highest is one hundred and three (103) degrees—one hundred and six (106) at Fort King, and at Fort Barrancas one hundred and four (104)—so that this extreme measure of heat is at intervals incident to the entire peninsula. Nevertheless, the thermometer may recede to such a degree as to produce a range for the month of nearly forty-five (45) degrees.

These high measures may be maintained at Fort King throughout the remaining months, even to September, but at the others, August alone (at Fort Barrancas) gives a record of a hundred degrees. July, at these places, seems to be the most uniform in its temperature condition, its possible range being much less than that of any other month.

Upon the western coast, and in the centre, the opposite extremes are not so great as upon the eastern; for the lowest at Fort King exceeds that at Fort Marion by fourteen degrees (14°), and at Fort Barrancas it is eight degrees (8°) above it. But at the last it is six degrees (6°) less than at Fort King. The highest recorded temperature

for the month, (April) however, is made at Fort King, and in May it also gives the lowest figures of the three stations. Taken altogether for these two months, less variability is found on the Gulf coast than at the other points—the possible range of the thermometer for each month, being less than that of the others. Finally, the average monthly fluctuation of temperature from April to September, inclusive, at the three stations, is forty-three degrees (43°), and if March was added, it would be still farther increased.

On the Pacific side, the lowest points at San Diego and San Francisco are ten or twelve degrees respectively, above that of Fort Marion, and two and four degrees respectively, above that of Fort Barrancas. At the first, however, the highest is one degree above that at Fort Marion, and ten above Fort Barrancas, and the consequent degree of fluctuation is fifty-three degrees. But at the second, the highest point is only eighty-four degrees, which, together with the lowest, secures a possible range less than all the others, 42° . In May, at these two Pacific coast stations, the temperature data are more conservative; so much so that the possible ranges are reduced much below those of Florida. July and September, at San Diego, afford an instance of one of those elevated extremes which are noticed in Florida— 99° being the highest in July, and 101° in September. But at San Francisco no such record is found, the very highest being 94° in September, although it is possible that this may be transcended in a longer series of years. At this last a remarkable state of uniformity appears to be maintained throughout the period, the lowest points varying from 42° in April to 51° in September, and the highest from 81° in May to 94° in September.

At the remaining post of the Pacific, the mean possible range for the period (51°) is very extensive, although those of the two spring months are scarcely more so than in Florida. The lowest recorded point here in April is one degree above that of Fort Marion; but of the other months, the lowest extremes are much below those of the Florida station. An extensive range for the period, and for the

individual months, characterize this post, although its mean possible range is only four degrees greater than that of Fort King.

In conclusion, we remark that the prime deduction from this comparison of their greatest extremes is, that the Florida stations equal in their monthly fluctuation at least, the more variable of the Pacific; whilst they fall far short of the least variable, as San Francisco, in point of uniformity of temperature condition, for the months and the whole period.

As incidental to the foregoing, we present the following data, illustrating the daily ranges and extremes of temperature for the month of April, at San Francisco and Warrington, Florida. The record from which they were drawn may be found in the Patent Office Reports for 1857 and 1858. Warrington is a Post Office in West Florida, of twelve feet elevation above the sea, and situated in lat. $30^{\circ} 21'$, and long. $87^{\circ} 16'$. In April, 1857, at this last, the average daily range of the thermometer was $16^{\circ} 9'$; the greatest daily range was 28° ; the lowest recorded point was 38° , and the highest 75° ; and the extreme range for the month was 37° . During the month there were twelve days which gave a range of over twenty degrees (20°). The same month of the same year gave, at San Francisco, the following record: The average daily range of the thermometer was twelve degrees (12°); the greatest daily range was 22° ; the lowest recorded point was $51^{\circ} 00'$, and the highest $83^{\circ} 00'$; and the extreme range for the month was 32° . During the time, only two days gave a range of over twenty degrees (20°). In April, 1858, at San Francisco, of which there is no record at Warrington, the average daily range was $12^{\circ} 5'$; the greatest daily range 30° ; the lowest recorded point was 48° ; the highest 81° ; and the extreme range for the month was 33° . Throughout the remainder of the period, the average daily range at the latter was preserved during the two years at about the position already assigned, namely, $10^{\circ} 5'$ "for the five warmer months, from May to September." But at the

former, the daily range from this month to the end of the period, was greatly reduced, being made equal, perhaps less, than at San Francisco. We submit them without further comment.

4th. *Winds and Weather.*—The State of Florida, occupying on this continent, a position intermediate to the tropics, and the belt of westerly winds that are known to prevail throughout the temperate zone, has its mode of circulation of the air classified under the head of an *abnormal* circulation—"that is, as belonging to local and peculiar influences, and not to systems." These local influences, being variable and varying in their character, necessarily determine results equally so; and hence originates that irregularity in the course, and strength, and frequency of the winds throughout the peninsula of which we are about to speak. At certain of its seasons, as the spring and winter, it is emphatically a theatre of conflict between the continental or polar, and the equatorial winds. But during the greater part of the year, occupied by an increasing high temperature, the natural diversion is from the sea to the land—yet the resulting winds transcend in force the ordinary sea-breezes, especially on the Gulf side. The preponderance of winds toward the land is produced by the elevated temperature of the more central and middle parts, but their irregularity, both in regard to strength and frequency, and their want of uniform prevalence in successive years, is a matter of great importance. On the eastern coast, as at Fort Marion, this is especially well marked, so much so that the relative force or frequency of any prevailing wind for one year, affords no true basis upon which to predicate the character of any future circulation. During five years' observations of the winds here for April, nothing could be more irregular—winds from north to south-east being irregularly recorded; and these may be considered to embrace the principal points of the compass over which the record of the period of high and continued heat extends. Those from the north-east and east had the greatest force. May, for a similar period, gave a corresponding record, with a slightly increased prevalence of the south-west winds; those, however, from the east and south-east had the greatest force and frequency of the single ones.

The remaining months gave a similar record—hence, taking this post as the representative of the Atlantic portion of the State, we may state that a prevalence of easterly winds upon the whole, is the rule.

At Fort King, the Atlantic and the Gulf influences appear to be in constant strife for the ascendancy, and each irregularly gains a temporary predominance over the other. For the most part, however, we believe that those from the Gulf are oftenest felt here. Thus, in April, May and June, of the years 1841 and 1842, the south-west winds were the prevailing winds at this station; but in July, 1841, the north-east prevailed, and in the same month of the following year, the south-east was the predominant wind. So also in August, 1841, the south-west were recorded, but in August, 1842, the north-east—and similarly reversed conditions obtained in September of the same years. So that places in the interior may be said to have an alternating though irregular circulation of the atmosphere. The winds from both quarters, however, whilst in the endeavor to relieve the disproportion of temperature distribution over the land and sea, correspond in their relative states of humidity. And although the elevated temperature of these months prevents the more sensible appearance and influence of the state of moisture induced by them, yet they maintain a permanently high dew-point.

The same record will apply to the extreme western station, Fort Barrancas. The south-east, south-west and north-east winds being the prevailing single winds. A large proportion of northern or continental ones were observed in April and May, but the south-east and south-west were generally of great relative force.

The general features of the atmospherical circulation of the Pacific coast have already been dwelt upon, therefore we need only remind the reader that throughout the present period, a uniform prevalence of westerly winds is observed—winds from some quarter into which west enters, generally the north-west and south-west, and possessed of great relative strength, and of low temperature, uniformly blow to the end of the dry season. Compared with each other, we find one characterized by a constantly recurring, permanent and uni-

form method of circulation, whilst the distinguishing features of the other are irregularity, both as to force and frequency, and a marked instability. The relative merits of each, however, in the discussion of their appropriateness to consumptive residence, may be about the same, for we have already intimated that the chilly nature and the force of those of the Pacific, may possibly be an objection to the climate.

The subjoined table is a synopsis of the weather, in its varying characters:

	April.			May.			June.			July.			August.			September.		
	Days.			Days.			Days.			Days.			Days.			Days.		
	Fr.	Cl.	R.	Fr.	Cl.	R.	Fr.	Cl.	R.	Fr.	Cl.	R.	Fr.	Cl.	R.	Fr.	Cl.	R.
San Diego, Cal.	16.2	13.8	5.0	13.2	17.8	4.0	17.8	12.2	1.2	23.0	8.2	0.2	22.8	8.2	1.0	23.0	7.0	0.5
San Francisco,	17.5	12.5	9.0	16.5	14.5	4.5	21.0	9.0	0.66	12.66	18.33	1.0	10.66	20.33	0.33	11.6	16.6	1.6
Ft. Vancouver,	10.7	19.2	10.7	19.7	11.2	4.0	17.33	12.6	6.0	36.3	4.66	3.0	23.3	7.66	2.0	14.0	16.0	3.0
" Marion, Fla.																		
(5 years).	19.6	10.4	6.0	23.6	7.4	5.4	17.8	10.2	11.0	23.2	7.7	11.7	20.0	7.0	10.6	18.8	9.4	9.9
" King, F, 5 ys	23.9	2.1	4.2	23.4	5.8	3.8	18.6	3.8	7.6	20.6	5.2	5.2	19.3	5.1	6.1	21.2	6.0	2.8
" Barranc's."	21.4	14.6	6.8	19.4	11.6	7.8	14.4	15.6	9.0	11.6	19.4	13.4	14.8	16.2	9.8	15.8	14.2	7.2

The means are as follows:—San Diego, fair days, 19.33—cloudy, 11.2—rainy, 1.9

San Francisco, " 14.98 " 15.21 " 2.34
 Fort Vancouver, " 18.55 " 11.88 " 4.78
 Fort Marion, " 20.5 " 8.6 " 9.1
 Fort Kigg, " 21.2 " 4.8 " 4.95
 Fort Barrancas, " 15.9 " 15.2 " 9.1

The characters of the period here embraced, at the respective places, differ so materially as to render a comparison between them quite difficult. On the Pacific coast the regularly alternating dry season is at this time fully established, varying, however, at the different posts in the ascent of the coast, as to the exact time of its commencement and continuance. These variations alluded to, inasmuch as they imply necessarily the longer or shorter continuance of the wet season at the several points, occasion essential differences between them, in respect to the relative number of fair, cloudy, and rainy days. At San Francisco, however, other causes, entirely independent of the measurements of rain, are in operation, which produce in the middle and close, an increased number of cloudy, over the others. So that, that immediate connection which elsewhere exists between the amount of precipitation and the proportion of cloudy days, or between the ratio of cloudy and rainy days, is here absolved. On the other hand, in Florida, this period embraces those months during which the greatest monthly records of the fall of rain are made, and which, both from its degree and the period of its occurrence, has, to some extent, identified it with tropical

regions. At Fort Marion, the months so embraced extend from June to September, and at Fort Barrancas, from May to September, and at Fort Brooke, a little to the south of Fort King, from June to September. In the months excluded from this rainy period—April at Fort Barrancas, and April and May at the others—the ordinary precipitation of the eastern United States is recorded. At San Diego, by the measurement of rain, the dry season is seen to extend from April to October; at San Francisco, from May to October; and at Fort Vancouver, or its parallel point upon the coast, from June to September.

In consequence of the profuse precipitation during the summer in Florida, it is generally alluded to as the wet summer, but this does not warrant the inference of an opposite dry season to it. Hence, in this State, we have a period of increasing precipitation from April forward to the fall months, which maintains a direct relationship to, and a dependence upon, the relative number of cloudy and rainy days. Yet even this is not strictly absolute, because of the very great measurements that are sometimes made in short periods of time; and this fact affords a clue to the record of a greater number of rainy than cloudy days, during certain months, at some of the Florida stations; for in those days upon which a fall of rain is observed, which occupies only a limited part of the day, (falling in the character of showers, sometimes excessive,) it would be an error to report them as cloudy days, since the cloudiness may have existed only a few hours. Hence the real signification of the term rainy-days, is those upon which there was a fall of rain, without reference to the period occupied by its fall, or to the extent of cloudiness which preceded or accompanied it.

The two sections, then, present opposite conditions at this period; the Pacific coast having a dry and rainless period, almost uninterrupted, whilst in Florida there is a continuously large and increasing precipitation throughout it—both of which are equally unnatural to the person who apprehends the proper climate of the eastern United States, by the amount and character of the precipitation, north of the Gulf coast, or in its middle latitudes. But so far as the discussion of the

data in the above table, is of value to us in our investigation, both sections might be classed under that condition, in which a general preponderance of fair weather over foul weather is maintained. For although this is apparently contradicted by the calculated means of the cloudy days, at San Francisco, equalling those of the fair, yet the essentiality of the classification remains undestroyed, because of the relation of the cloudy and rainy days. The proportion of cloudy days is produced by certain local causes, which operate during the day, most intensely; but the clouds thus produced disappear without a fall of rain. Dr. Gibbons says that "in almost every month of the year, even during the dry season, the clouds put on the appearance of rain, and then vanish. It is evident that the phenomena which produce rains in other climates, are present in this; but not in sufficient degree to accomplish the result, except during the rainy season, and then only by paroxysms with intervening periods of drought." At San Francisco, after the passage of the two spring months, we observe the proportion of cloudy days rapidly augmenting, so that the proportion of June to that of September, stands as 9 to 16.6, some of the intervening months having a still higher increase. But as has already been remarked, how do the rainy days behave during this increase of the cloudy? They remain at the same figures, less than one-fifteen part of them. As it is expressed in the computed means for the period, the rainy days would embrace 2.84 days of every month. Now, therefore, under the head of fair weather, as here advanced and understood in its relation to physical, out-door exercise, twenty-seven days or more would be embraced. If the same be applied to San Diego, the proportion becomes increased still further to nearly twenty-nine days. In this light, they transcend the posts of Florida, the ratio being, at Fort Marion, twenty days; at Fort King, twenty-one days; and at Fort Barrancas, twenty-two days. In this peninsula, the average number of rainy days at Fort Marion exceeds slightly the cloudy, the relation being as 9.1 to 8.6; at Fort King it is as 4.95 to 4.8; but at the other posts, the rainy days constitute only about three-fifths of the cloudy days.

5th. *Rain in inches.*—Of the precipitation at this time, we

shall have little or nothing to say, reserving our remarks until the discussion of their humidity is commenced. A simple statement of the measures at Florida will suffice—the others having already been referred to in other parts of this essay. At Fort Marion, in a period extending from three to four years, the mean of April is 1.56 inches; of May, 2.00; of June, 4.27; of July, 3.24; of August, 3.03; and of September, 5.85. At Fort Brooke, in a period of sixteen years, the mean of April is 1.95; of May, 3.24; of June, 7.04; of July, 11.10; of August, 10.10; and of September, 6.23 inches. At Fort Barrancas, with nine years' observation, the mean of April is 2.94; of May, 4.05; of June, 4.66; of July, 6.80; of August, 7.23; and of September, 5.25 inches. From this, it appears that more rain falls in the southern and western parts, than in the eastern.

*Hydrocyanate of Iron—In Epilepsy—*By PETERFIELD TRENT,
M. D., of Richmond, Va.

ARTICLE VI.

In August 1858, I was called to see Miss V. A. I found her senseless, and convulsed, her face was tinged and livid, she was struggling violently, and foaming at her mouth, her pulse was hard, and every indication of plethora existed. I directed cups to her spine and active purgation.

On paying my second visit I found her still comatose—no return of Epileptic fit, her pulse was softer, the purgative had operated well.

Third visit—Found my patient perfectly conscious, was not aware of having had such an attack.

Upon enquiry, I found Miss V. A. had been liable to similar attacks from her 12th year—she being now 18 years old. The attacks occurred at intervals of some week or two, she had been for a long time under the best Physicians of our city: all the usual remedies had been resorted to in these attacks, and afterwards everything that skill could suggest was tried, her mind I found was evidently impaired, upon enquiry, I found her catamenia very regular as to return and no material variation as to quantity. Her bowels

were regular, and there was no tenderness upon pressing the spinal column. I directed cold water to be poured upon the head from a pitcher by a person standing in a chair, and blisters to be applied to the spinal column at short intervals. The bowels to be kept always open with a little Bicarb Sodæ pure and Rhubarb. Her diet to be light, but nutritious. I further directed pills of 1 gr. oxide of silver and extract Hyoseiami 3 times per day. I saw my patient at intervals of three or four days for upwards of a month, she improved very slowly. Being called from town I saw her no more until about the month of Dec. 1858, when I was called to see her in another attack, I found the attack not as severe as the first one, learned from her Aunt that she had had several attacks since the one I was first called in to see her. In this attack I used purgatives, and applied a blister four fingers wide, the whole length of the spinal column—no other treatment used. Having seen Dr. McGugin's communication to Messrs. Tilden & Co., of New York, relative to the use of the Hydrocyanate of Iron with Valerian in Epilepsy, I immediately directed one hundred and twenty pills made according to his formula, and ordered her to take one pill three times per day with the dose to be increased at the end of a week to four pills per day—I directed also, if there was still some warmth about the head to continue the pouring of cold water upon the head once a day, also occasionally to apply small blisters three and four along the spinal column, as soon as one healed in three or four days more to put another lower down—I further directed a spare and nutritious diet, and the eating of no supper nor anything that would cause flatulency or derange the digestive organs. I did not see my patient again until Aug. 1859, when I was called to see her labouring under bilious attack. I found her married, and looking very well, upon enquiry I found her attacks had become less and less frequent, and at the time I saw her she had no symptom of her old enemy for a month or two; she continued taking the pills, when I last saw her husband she had had no attack of her complaint.

Case 2d.—January 29, called at 2 A. M., to see W. B. a stout athletic drayman, 35 years old. Upon my arrival I found Washington labouring under the usual symptoms of an Epileptic Fit. I immediately bled him, and directed a brisk cathartic after the operation of which, if he was not entirely restored to consciousness a blister four fingers wide to be applied the whole length of the spinal column—upon my second visit I found the purgative had acted well, and my patient was conscious, but was entirely unconscious of having been sick. Having procured from Messrs. Tilden & Co., an ounce of the Hydrocyanate of Iron, I immediately prepared some pills according to Dr. McGugin's formula. I gave the same directions relative to diet, &c. as I did in case No. 1.

During the month of May I was called again to see Washington, found the attack not so severe as the first one. Directed an emetic believing a hearty supper had brought the attack on, the emetic revealed my opinion to be right, he however soon had another fit. I had him cupped along the spinal column, and gave a brisk purgative; 2d visit my patient had gone to work. Dec. 1859, called to see Washington, but found the fit had passed off, he was, however, very drowsy, and as is usual in severe cases he did not recollect being sick, expressed much surprise at seeing me that time of night

His wife informed me that her husband had improved very much, and that the pills, alluding to the Hydrocyanate Ferri, etc. had done him a great deal of good, and that his spasms as she called them were not near so severe, and did not come on so often as they did at first and that she believed if Washington had continued to take the pills regularly as I directed, he would have been cured long since. He is still taking them, and I have every reason to believe his case will be a complete cure. The following is the formula I have had my pills made from:

R—Hydrocyanate Ferri ʒj, Pulv Valerianæ ʒij, by pill No. 120. Dose one pill three times per day gradually increased to four pills a day.

In a case now under treatment, I have by the advice of Dr. W. L. McGugin, of Keokuk, Iowa, added to the above formula 5j of extract *Cannabis Indica*, the general treatment the same as prescribed for cases No. 1 and 2 reported in full. This disease is seldom fatal, yet often ends in fatuity or insanity; well may a family which it has once entered look with dismay and anxiety whenever it threatens to revisit a beloved one in that family—one striking peculiarity in this disease, is that a case seems always to improve under any new plan of treatment. I believe with Dr. Watson that everything should be done during the interval of the attacks to prevent their recurrence. Try and get rid of the predisposition of the disease, by protecting the patient against its exciting cause—pay proper attention to the health first of all. If there is a disposition to plethora reduce it by proper attention to the diet, avoiding crudities. urge gentle exercise and if need be, deplete by cups to the spine. If on the other hand a different state of things exists, they can be removed or lessened by tonics, properly and judiciously used. In our treatment we should aim to give stability and firmness to the nervous system. In almost every epileptic subject there is a readiness to be impressed, and great mobility of the nervous system. Iron cannot be called a specific in this disease, yet it invariably does good by giving tone to the nervous system, and rendering it less prone to be effected by the slighter exciting causes. The preparation of Iron, the Hydrocyanate I have alluded to as having used in the treatment of the cases just detailed, certainly possesses advantages that entitles it to consideration among the profession, the smallness of dose, and the ready manner it can be administered, and in sufficient doses small as they may appear to do good, it does not constipate, nor produce any unpleasant symptom either in the head or stomach.

Fever—The Duality of its Source.—By Dr. WM. ADDISON,
F. R. S., &c.

[Dr. Addison starts with the assumption that “fever is the expression of disorder in the corpuscles of the blood;” then, as these corpuscles derive the materials of their growth and nourishment from two sources, viz., the atmosphere and the plasma, the argument is continued that they may be disordered by injurious matter derived from these two sources. Thus we have two forms of fever, designated respectively contagious and hectic. Yet in common with other cellular bodies, the corpuscles of the blood possess considerable power of resistance to disease. It is not every passing impurity of the atmosphere, nor every injurious change of quality of the plasma, that establishes symptoms of fever. Hectic fever is produced by the effects of a local disease (as pulmonary suppuration, or suppuration owing to necrosis of bone,) on the plasma of the blood. To show that a local disease may and does produce changes in the blood plasma, an experiment is detailed in which agglutination of red corpuscles and formation of colourless matter, could be seen in the capillaries of a frog’s foot, as the result of irritation—these altered blood elements passing into the circulation along the dilated veins. The author then continues:]

No one can doubt that the fluid of the blood is altered, and may be distempered, by unwholesomeness of diet, and by neglect of the daily excretions by the skin, bowels, and kidneys. It is also evident that these common sources of distempering of the fluid of the blood must operate not only in persons of health, but also in persons who may be afflicted with chronic forms of inflammation, such as are present in necrosis of bone, in diseased joints, pulmonary consumption, &c. And if, in these last mentioned examples, distemperature of the fluid of the blood from errors in diet, or other such causes, concur with distemperature from absorption of spoiled matter from places of chronic suppuration, then there will be *deuteropathy of the plasma*, or disturbance of the qualities of the fluid of the blood from two points at the same time; namely, unwholesomeness of food and absorption of morbid matter. And it follows from the physiological relation subsisting between the corpuscles and the fluid of the blood, that an increasing debasement of the qualities of the fluid *must* at length disorder the corpuscles.

But one of the chief points we have been arguing for, is

the therapeutical relations of inflammation to the fluid of the blood. Suppuration is a means whereby injurious matter is eliminated from the plasma; and granulations and pus may perform the office of a depurating organ vicariously. Now we are saying that chronic suppuration and ulceration will occasion deuteropathy of the plasma, and thereby fever. This seems an incongruity. A little consideration, however, will show that it is only a seeming incongruity. Diet sustains life and health only by measure: it is pathological in excess and by deficiency. Heat or temperature contributes to life and health only by measure. Oxygen, an essential constituent of the atmosphere, is an element of health and life only by measure; any great variation from a mean amount is pathogenetic. Too much or too little would equally occasion disturbance of health.

So likewise of the matters we are discussing; the process of repair in the commonest injuries has its pathological as well as its therapeutical aspects. The reaction upon which cure depends may be too much, or too little, or too long about. Granulations may be languid, or indolent, or deficient; or they may luxuriate, and usurp the place of fibrous tissue when fibrous tissue is needed for reparation. And fibrous tissue may hold its ground when osseous tissue is demanded for cure. This is sometimes the case in fractured bones. In ordinary contusions, great swellings appear and disappear. In their appearance, matter from the plasma of the blood must have become stationary in the part. In their disappearance, this matter must have been absorbed again into the blood. There must be, therefore, in these cases, in some way or other, a ready passage for elements from the injured tissue into the fluid of the blood.

Analogously, inflammation as a depurative reaction in distemperatures of the fluid of the blood, may be hindered and interfered with in various ways. There may be too much or too little of it; and certainly it is very often protracted by the persistence of the blood-disturbing causes. If, then, there be a ready passage—to and fro, as it were—between the fluid of the blood and the common tissue, it is not difficult to perceive that interference and hindrances may interrupt, or even reverse, the action in this particular.

The ordinary process of repair, then, has a double aspect; and so, also, has inflammation. And our argument is, that protraction or chronicity in either of them introduces the liability to absorption of spoiled material, and that thus therapeutical reactions may operate retroversely and patho-

logically upon both parts of the blood; the fluid first, and then the corpuscles.

But, that we may give an outline of the argument as it relates to hectic fever, we take as examples necrosis of bone, gout, and scurvy; and, in contrast with these, scarlet fever.

Necrosis of bone produces inflammation. There are hinderances to the removal of the dead bone; therefore inflammation passes into protracted suppuration and ulceration. These gradually weaken the patient; they disable him from taking exercise; digestion is impaired; and the functions of the depurating organs are disturbed.

This is one source of distemperature of the plasma. Distemperature of the plasma aggravates the existing inflammation; but the antecedent—the dead bone—cannot, in the case we are contemplating, be removed. Therefore disorder must proceed, until at length, from the places of suppuration, morbid matter ebbs back into the circulation; and the plasma, thereby thoroughly disordered, reacts upon and disorders the corpuscles, and hectic fever, more or less, appears. Upon this interpretation of the sequence of events between dead bone and fever, to cure the fever the blood corpuscles must be relieved from their disorder; to relieve them the qualities of the plasma must be improved; to amend the qualities of the plasma, the chronic suppuration must cease; and that chronic suppuration may cease, the dead bone must be taken away. We all know that the effectual removal of the dead bone will cure the fever.

Errors in diet by excess produce distemperature of the plasma. And if the depurating organs, or some of them, fail in removing the distemperature, inflammation arises. In gout, the patient is surrounded with every comfort. The error in diet is most probably one of excess; it can, therefore, be easily interdicted; the antecedent can be readily removed; and, by medicine, the depurating organs can be stimulated to a more active working. For these reasons, distemperatures of the plasma are concluded to be simple; its qualities are disordered from manageable sources, which may be attacked and abolished before disorder is communicated to the corpuscles. Inflammation in gout is, therefore, acute, and without fever.

On the other hand, in scurvy, the errors in diet are those of deficiency or unwholesomeness, and are much more difficult to deal with, especially where persons are crowded together in unhealthy localities, or limited to camps or ships. The individuals are poor, or from other circumstances,

cannot command the necessaries of life. Therefore, forms of inflammation, which in the rich are simple and acute, are here (or in the poor) chronic, and pass on to suppuration and ulceration, as in the sailors before mentioned, whose bare legs and feet were bitten by mosquitoes; upon which example we observe that because the unwholesome diet and confinement could not be changed, therefore the bitten parts passed into chronic ulcers. And if, in persons thus situated, with forms of chronic ulceration from continued unwholesomeness of diet, or other privations, morbid matter should be continually ebbing back into the circulation from places of chronic ulceration, the elements of fever, from a double debasement of the plasma, would exist; and fever thus arising would obviously be different from fever arising through miasma in the air.

In scarlet fever, it is concluded, that disorder of the blood begins, not with the plasma, but in the corpuscles. The illness commences, not with forms of inflammation, but with symptoms of fever. There has been no error in diet: a miasmatic air has acted on the blood; a specific poison is generated; and the plasma is distempered posteriorly to disorder of the corpuscles. But (here as in small-pox) no natural depurating organ seems adapted for the removal of the poison of scarlet fever from the plasma; therefore inflammation arises—that is to say, reactions between the plasma and the common tissue. The forms, amount, and duration of inflammation in scarlet fever, indicate the amount and severity of the disorder of the blood. Without these reactions, the patient would die from a poison shut up in the blood; with them, in their severest forms, there is a battling for life. When a joint has been crushed, death would take place from mortification, were there no reaction; but, this established, the patient is saved from the first and most pressing danger, though afterward he has to pass the ordeal of inflammation, abscess, suppuration, ulceration, and very probably hectic fever too, as best he can, or suffer amputation for a chance of life. In scarlet fever, to cure the inflammation, the plasma must be freed from poisonous matter; and no more must enter it. That no more may enter it, the corpuscles must cease to generate and excrete a poison. Now, from the course observed in normal cases of an exanthematous fever, we may probably conclude that the corpuscles pass through their disorder in from four to six or eight days. When their disorder has passed, no more poisonous matter is discharged from them into the plasma;

and, no more poisonous matter mingling with the plasma, the inflammatory reactions and the natural depurating organs together succeed in restoring the plasma to its natural state; whereupon, the blood regaining its normal constitution, inflammation comes to an end, and the patient is cured. The pathological and therapeutical sequences are the same as in small-pox.

In the midst of these therapeutical actions and reactions for the depuration of the blood in fever, it would seem that a depurating organ is sometimes coerced, as it were, to an increased and incongruous working; matter not naturally found in the secretion of the organ appearing in it at the crisis of the fever. In the performance of this enforced duty—the elimination of poisonous matter from the plasma—the parenchymatous elements of the organ may be overtasked and injured. Thus, in scarlet fever, the poison in the blood sometimes occasions parenchymatous disease of the kidneys; and, in such cases, there is evidence also of inflammatory reactions in the common tissue of the organ: This complication may have the same reflex effect upon the blood as chronic ulcerations. Spoiled material from the overburdened kidneys may ebb back again into the circulation; and a new blood-distemper may be inaugurated from elements of urine retained in the plasma. Such being the case, there would be present the antecedent of a second or reactionary fever; namely, deuteropathy of the plasma—that is to say, distemperature—from disease of the kidneys, superposed upon the remnant of the poison of scarlet fever. And it is in perfect accordance with the argument, that a secondary fever from disease of the kidneys should be more apt to appear as a consequent of the primary fever, where the inflammatory reactions in the skin are too slight or insufficient for the full and effectual discharge of the poison. But it is to be observed, that the second fever is not a relapse or reappearance of the first; it is another fever, of different origin. The first fever was occasioned by an ærial miasm; the second is occasioned by a debasement of the plasma acting injuriously on the corpuscles of the blood.

Let us give a brief summary of the facts and of the arguments.

In necrosis of bone, the pathological series begins with dead bone. If this cannot be taken away, it ends with fever, from deuteropathy of the plasma disordering the corpuscles of the blood.

In pulmonary consumption, the pathological series begins

with tubercles in the lung, There are hindrances and difficulties in their discharge: suppuration is made chronic; and the phenomena end with fever from deuteropathy of the plasma.

In scurvy, the series begins with unwholesomeness or deficiency in diet, or other privations which cannot be changed. Ulcerations arise; and the series may end with fever, from deuteropathy of the plasma.

In these examples—namely, hectic fevers—disorder of the blood-corpuscles is posterior to a debasement of the fluid in which they swim: and forms of inflammation, protracted for longer or shorter periods, precede the fever.

On the other hand, in the contagious primary fevers, the pathological series begins with disorder of the corpuscles. It ends with forms of inflammation; because distemperature of the fluid of the blood is, in these fevers, posterior to disorder of the corpuscles. Thus we interpret the relations of fever to inflammation, and of inflammation to fever, by the difference between the two parts of the blood. The facts are, that sometimes fever precedes inflammation, sometimes forms of inflammation precede fever; because sometimes (from aerial poisons) the corpuscles are disordered before the plasma; and sometimes (from unwholesome diet, privations, and chronic ulcerations) the plasma is disordered before the corpuscles. If you accept these interpretations, the whole subject of repair, inflammation, and fever, presents a coherency which is worthy of your attention. Thus:

Mechanical objects injure the common tissue; and the process of repair arises.

Errors in diet disorder the plasma; and inflammation appears.

Miasms in the air affect the corpuscles of blood; and primary fever is the result.

Both the process of repair and inflammation, from hindrances and difficulties, may pass into chronic or protracted forms of suppuration, ulceration, and discharges; whereupon, if spoiled material should enter the circulation, and, by reiteration or quantity, thoroughly debase the plasma, the corpuscles suffer, and fever appears; namely, reactionary, hectic, or a plasma fever.—*British Medical Journal*, May 28, 1859.

Syphilitic Pneumonia.

We well remember hearing Dr. Stokes describe a form of pneumonia common amongst drunkards,

and which he called "drunkards' pneumonia." There is also an inflammatory consolidation of the lung which owes its origin to the poison of syphilis, and hence is well worthy of the appellation of "syphilitic pneumonia." At the Royal Free Hospital, on the 22d ult., we were shown a well-marked case of the latter, under Dr. O'Connor's care; the patient, who was admitted about the middle of July, being thirty-five years of age. His syphilitic history was clear, and was associated with a papular eruption, some of the copper-coloured spots being visible up to the present time about the back and shoulders. On his admission, the physical signs of pneumonia were present, the dulness over both lungs was very considerable and extensive, and the vocal resonance was strong and distinct all over each. The dyspnoea, therefore, was urgent, but the breathing was not so embarrassed as in ordinary pneumonia. There was also frequent cough, without expectoration, associated with much wasting, and a small and quick pulse (100.) His treatment consisted of blisterings all over the chest, five-grain doses of iodide of potassium from the 23d to the 28th of July, and four grains of mercury, with four grains of extract of conium, three times a day, were ordered, and continued till the mouth became sore; and a quarter of a grain of muriate of morphia every night. The gums are tender now; he is taking iodide of potassium with his cough mixture, and the disease is yielding. One of his testicles was much enlarged, of a pyriform shape, and indurated, principally depending upon enlargement of the epididymis. His voice is hoarse and husky.

This is one example in some six or seven which have been admitted into this hospital with the symptoms of inflammatory chest disease, clearly the result of syphilis. A case, in many respects similar to it, is under Dr. Willshire's care at the Charing-cross Hospital, differing only to this extent, that the bronchial tubes, trachea, and faucial mucous membrane have been affected, instead of the lung tissue. The patient is a middle-aged woman, whose history is obscure, but the ulcerations and other peculiarities point to syphilis as the cause of the disease. The secretion from the tubes is copious, and occasionally hemorrhagic. She has much improved under the use of the syrup of the iodide of iron.

We have seen cases in the Royal Free Hospital, under Dr. O'Connor's care, wherein the evidences of phthisis were present, with an absence of the physical signs of the disease,

the symptoms depending upon constitutional syphilis, and readily yielding to the exhibition of mercury.—*Lancet*, Sept. 3, 1859, p. 238.

The Formation of Clots During Life: By GEORGE MURRAY HUMPHREY, M. D., F. R. S., Surgeon to Addenbrooke's Hospital; Lecturer on Surgery and Anatomy.

[THE following extracts from an unfinished series of papers (accompanied with cases) are taken from recent numbers of the *British Medical Journal*, the cases being generally omitted.]

i. *Formation of Clots in the Veins.*

The obstruction of the veins, by clots forming in their interior, has, of late years, been the subject of investigation by several pathologists, who have pointed out clearly the conditions under which it most frequently occurs, and the changes which take place in consequence. Still, doubts appear to exist, respecting the causes of the phenomenon, and the starting point of the mischief; and, though the affection is one of very frequent occurrence, and may usually be diagnosed with facility, it certainly has not attracted the attention of practical men so much as it deserves. Very commonly it is suffered to pass unnoticed during life; and, after death, the vessels concerned are seldom examined to a sufficient extent, and with sufficient care to enable the observer to form a correct opinion upon the matter.

In all the cases that I have seen, with the exception of one or two, the patients have been in a feeble state, most of them having been previously reduced by some other disease. The most frequent causes of the accompanying debility, were: some chronic disease, such as phthisis, or a discharging abscess; old age; low fever; or an acute inflammatory affection, more particularly of the serous membranes, or of the lungs. In no instance has the condition of the veins appeared to be the cause of death, either directly or indirectly; though in many cases the patient died of the diseases which preceded that condition, and the state of the blood which was induced appeared in some, to accelerate the fatal result. It is, moreover, a very important fact that in no case, which has occurred within my observation or reading, has this affection been productive of any of those alarming and much to be dreaded symptoms, which attend occasionally upon traumatic inflammation of the veins, and occur under other circumstances, and

which are supposed to depend upon the admixture of purulent, or other morbid fluids, with the circulating blood. In some instances, as in that first related, the affection is attended with uneasiness, or pain, in the early stages. More commonly, it comes on insidiously, and does not attract attention till the swelling of the limb is observed, when some tenderness in the course of the vein may generally be found. Not unfrequently, we are called upon to treat an œdematous state of one of the lower extremities, which commenced during an attack of fever, or some other illness, and which may be traced to an obstruction of the vein that had escaped notice. In several cases the first suspicion of any obstruction to the circulation has been excited by the observation, after death, that one of the limbs was swollen; this has led to an examination of the veins, and to the discovery in them of clots, which must have existed many days.

The circumstances under which the disease occurs, and the fact that it often affects several parts of the circulatory system at the same time, or consecutively, in the same person, are quite in accordance with the supposition that it depends, primarily, not upon a morbid condition of the vessels; but upon a preternatural tendency to coagulation in the fibrine; and this view derives confirmation from several of the following phenomena, which may be observed in the origin and progress of the malady.

Thus, the obstruction most frequently commences in the parts of the venous system which are most favorable to the coagulation of the blood, viz: in the great veins, particularly those of the lower extremities, where the current is more feeble than in other regions. The points of selection in the lower limbs are: first, at or near the junction of two large veins, as the external and internal iliacs, the superficial and deep femorals, the anterior and posterior tibials; the projecting angles between the confluent trunks, furnishing favorable spots for the settling of the blood; secondly, in the neighborhood of the valves. These present loose, free edges, to which the fibrine may readily adhere; and they also have the effect of shutting off from the circulating current the small quantity of blood which lies above them, included in the retiring angle, between the upper surfaces of the valves and the adjacent wall of the vein. The blood so situated must be almost at rest when the circulation is feeble and the limbs are kept quiet, because the valves will be then only partially opened, and, being at rest, it has a favorable opportunity to coagulate and become the nucleus of a larger clot. That this is no imaginary cause is proved by a case in which I found small

dry clots lying above—that is, under shelter of—the valves of the femoral vein; the remainder of the vein being free from clots, or nearly so. However, the veins just above the valves often present slight bulgings, or dilatations. Their walls are here a little thicker than at other parts, and they exhibit a faintly reticulated appearance upon the internal surface.*

It is to be remarked, that the valves are more numerous in the lower limbs than in the upper, and in the deep veins than in the superficial.† They are also often placed in the main veins near the points of junction of large branches; so that a number of causes combine to facilitate the coagulation of the blood in these situations.

Thirdly, the formation of the clot often begins in the popliteal vein. This has relation, not merely to the fact that the trunks of the anterior and posterior tibial veins, and the saphena minor are here united, but also to the fact that the internal surface of the popliteal vein is often remarkably uneven, presenting quite a reticulated appearance from the interlacement of opaque strengthening bands which form projections in the interior.

In the upper part of the body, the clots form most frequently at, or near, the junction of the jugular and subclavian veins, where there are always large valves, and in the cerebral sinuses.‡ In the latter the peculiar construction of their walls prevents much variation in their calibre (see my *Treatise on Human Skeleton*, p. 200,) so that there must be considerable variations in the rate at which the blood traverses them; and they present, at the points of junction of the branches, many and marked projecting angles favorable to the settling of the fibrine.

The clots form not unfrequently in the venous plexuses around the prostate,§ and in the hæmorrhoidal veins.

* In a man, aged 76, who died of senile gangrene, I found a reddish brown clot, which was evidently of many days standing, closely adherent to the valves of the femoral vein, near the junction of the profunda. The rest of the veins, in both lower extremities, were healthy, and contained no peculiar clots.

† I have found the distances at which the valves are placed in the superficial veins of the lower limbs to be about equal to those at which they are placed in the deep veins of the upper limbs.

‡ They were found by Virchow *Froriep's Notizen*, xxxvii, 30, in the cerebral sinuses, in six cases out of eighteen.

§ In a man, aged 67, who died with sloughing of the nates, after fracture of the thigh, I found several short thick firm clots, with stunted branches, in the veins near the prostate. They were smooth, quite unadherent, and tumbled out of from the divided vessels. A section of each showed a central cavity containing red fluid, surrounded by a wall composed of tough, laminated, reddish or mottled fibrine. The fluid exhibited red corpuscles and a great number of pale nucleated cells.

It appears that, in general, the formation of the clot commences on the outside, that is near to the coats of the vein, where the current must be somewhat slower than in the axis of the tube; and the first stage in the process is the settling of a patch or layer of fibrine upon the inner surface of the vein. This is increased by the addition of successive layers upon the interior, whereby the channel for the blood is diminished. Soon the tube is completely obstructed; this result being commonly accelerated, more or less, by the clotting of the blood, in addition to the settling of the fibrine. The two processes—fibrinous deposit and blood-clotting—which differ, probably, only in the circumstances that the greater rapidity of the latter causes the entanglement of the red globules with the fibrine, go on somewhat irregularly, whence the mottled appearance of the coagula; but, as a general rule, the clots are firmer and more fibrinous near the exterior, softer and darker in the middle. In a young woman, who died of fever, with peritonitis, excited by approaching perforation of the ileum, we were led to examine the veins by observing some cedema about the left ankle, and found the external and internal iliacs, at and near their junction, on both sides, occupied by coagula, which, on the left side, extended down below the popliteal vein, and, on the right, terminated in an ordinary clot at Poupart's ligaments. Sections of these clots showed them to consist of laminated fibrinous tubes, moderately firm, and enclosing central cylinders of dark, soft blood. The thickness of the fibrinous tubes varied. In some places, more particularly near the junction of the iliacs, where we judged the affection had commenced, it was so great as to leave little space for the dark central portion of the clot. In other parts, the fibrinous layer was thin; and in one place it was separated from the internal surface of the vein by a layer of soft, dark, clotted blood, resembling an ordinary recently formed coagulum in consistence and appearance. This was probably formed from blood, which had insinuated itself between the clot and the vessel, and had coagulated shortly before, or possibly after, death. A transverse section of one of these clots showed very clearly the central dark soft coagulum surrounded by a circle, or tube, of laminated fibrine, which again was enclosed by a more recent dark external layer.

The exterior of the clot is usually smooth, sometimes having quite a polished appearance, except at the points where it has become adherent to the sides of the vein. These adhesions are not usually very extensive; they are most commonly found where the clot began to form, and vary in their firmness

with the period of their duration. The smooth character of the external surface of the clot is important, inasmuch as it rather militates against the view so much advocated by Virchow and some other pathologists, that portions of the clot are very liable to be detached, and to be carried along in the blood-current, till they cause obstruction and give rise to secondary coagula in distant vessels.*

The extension of the clot in the direction of the heart is usually limited by the junction of some large vein which is sufficient to maintain the current of the main trunk. Often the clot does not reach quite so far as this. Thus, when the clot commences at the junction of the iliacs, on one side, it commonly extends about half way up the common iliac; and, in a case of cancer of the uterus, in which the iliacs, on both sides, were obstructed, the clot extended up the vena cava nearly as high as the renal veins. Sometimes the clot reaches further, and terminates in a round or conical end on the *cardiac* side of the point of junction of some large trunk. In the peripheral direction, it is prolonged to a variable extent into the tributary branches, but does not usually reach the small veins; indeed, the latter are very rarely obstructed, either primarily or secondarily, in this affection.

The clot not only fills and chokes up the vessels, so as to prevent the passage of blood through it, but also distends or stretches it, and this distension, together with a certain amount of irritation resulting from the presence of a solid body in its interior, soon produces an effect upon the walls of the vein, the results of which are exhibited chiefly, or almost exclusively, on the *exterior* of the vessel. Thus, we soon find that there is inflammation of the investing cellular tissue, causing an effusion of serum, lymph or pus: whereas, in the *interior*, there is commonly little change beyond a removal of the epithelium from the lining membrane, and more or less intimate adhesion of the clot to it. There may be also an increase of redness at some parts, which is evidently due to staining by the contiguous blood, inasmuch as it is commonly proportionate to the color of the contained clot, being deepest where the clot is darkest, and less marked, or quite absent where the clot is composed chiefly of fibrine. I have never seen lymph or pus, or any inflammatory product, formed from the interior of a vein. This proves that the inner coats of veins are by no means easily excited to inflammation, and is

* Mr. Hewett. *Medico-Chirurgical Transactions*, xxviii, 74, found the in clot one case "enveloped in a perfectly distinct, transparent, smooth, polished membrane, presenting the appearances of serous tissue, with arborescent vessels in its structure."

quite in accordance with the results of experiments made upon the veins of animals by Lee,* Mackenzie,* and Virchow (*Handbuch der Speciellen Pathologie und Therapie*, i, 161.) It accords also with the general results of my experience, which by no means indicate a liability to inflammation in the inner coats of veins. I have, in many instances, applied a ligature to the chief vein of a limb after amputation, without any ill result in a single case; and I have never seen any mischief caused by the ligature of a varicose vein or a hæmorrhoidal tumor, though I have employed that method of treatment very often. It is not improbable that where unfavorable symptoms have ensued in cases of this kind, they have been caused, not so much by inflammation of the vein itself, as by suppuration in the surrounding cellular tissue.

When examining a vein which is plugged by a tough and adhering coagulum, one can scarcely be persuaded that the circulation could ever have been re-established through it, if the patient had survived; yet there can be no doubt that this does take place, and that a vessel may, in process of time, resume its functions, and be restored nearly, if not entirely, to its natural condition, after its channel has been completely, or to a considerable extent blocked up by a clot. The perfect restoration of the limbs in several instances, assured me of this; and it is in accordance with the great difficulty which I have experienced in effecting the permanent obliteration of varicose veins by temporary ligatures, or by other means which had for their object the formation of coagula in the vessels. It appears that the blood is almost sure to revert to its natural channel, in process of time, unless the vein be completely destroyed.† The dissection in the following case illustrated the condition to which the clots became reduced. A man, aged sixty-three, died, of erysipelas and pleuro-pneumonia, ten days after resection of one ramus of the lower jaw, performed on account of extensive necrosis and suppuration, which had continued for several months, and had reduced him

* *Medico-Chirurgical Transactions*, xxxv. and xxxvi Dr. Mackenzie infers, from the results of numerous experiments on the venous system, that the origin of *obstructive* phlebitis is to be sought for in a vitiated state of the blood, that this causes an irritation of the lining membrane of the veins at various points, which, in turn, leads to coagulation of the blood. I do not, however, discover sufficient evidence of this irritation of the lining membrane of the veins, and think there are many reasons against admitting that it is a necessary, or even the ordinary, intermediate link between the vitiated and the coagulated condition of the blood.

† Hence the treatment of varix, where it seems desirable to resort to operative procedure, my practice is to pass a needle or silver wire beneath the vein, and to allow the metal to find its way out by ulceration through the vessel and the superjacent skin.

to a very low state. His health had long been bad; but he did not mention that he had suffered any particular affection of the lower limbs. I was led to examine the veins in consequence of the condition of the pulmonary arteries, presently to be described. In dissecting out the femoral and popliteal vein of the left side, I remarked that the investing layer of cellular tissue, usually so delicate, was more coarse, tough, and closely adherent than natural. With this exception there was nothing to attract attention on the exterior of the vessels, or in the structure of their walls. In the interior were numerous delicate, but tough, white bands or strings, extending across or along the vessels; some were adherent in their whole length, and others only at their ends: also, small, firm lumps of pale yellow, or gravel, or golden color, smooth on the surface, and more or less adherent to the inside of the vein. In some places there were merely yellowish stains in the lining membrane of the vein. The nature of these stains would have been scarcely recognizable, had they not been in most instances continuous with the threads or some other evident remains of the clots. These veins contained also coagula, which appeared to have been formed recently, probably after death. The popliteal and lower part of the femoral vein, on the right side, presented appearances similar to those on the left. The upper part of the femoral vein was occupied by a firm, dry, mottled clot; and the profunda was tightly plugged by a continuation of the same, of white color. Above the junction of the profunda, the vein was distended by a clot of comparatively recent formation, which in the centre, was semifluid and of dirty cream color. This soft part contained red corpuscles, and larger pale cells having indistinct nuclei.

It is no uncommon thing for the middle part of the clot to be, as in this instance, softened and converted into a dirty pultaceous or creamy substance, in which corpuscles are found, varying in size and shape, less regularly formed than pus-cells, and having less distinct nuclei. These are intermixed with oil-globules and red corpuscles, which may be natural in appearance, or more or less misshapen and granulated, and in various stages of dissolution. The changes which the blood thus undergoes are, as it would appear from the experiments of Mr. Gulliver (*Medico-Chirurgical Transactions*, xxii., 138,) similar to those which take place when it is subjected to concoction after its removal from the body. They seem most frequently to occur when the clot has been quickly formed.

In all the cases that I have seen, except one, the soft central part of the clot was walled in by the firmer exterior portion, so that there was no opportunity for any of the *débris* to enter

the circulating current. We come next to inquire what are the conditions of the blood which predisposes it thus to coagulate in the veins during life. It has been already remarked, that the clots are most liable to form in persons who are in an enfeebled and cachectic state. Now, in this state, it is well known that the fibrine of the blood exceeds its normal proportions; and it appears that its tendency to coagulation is increased by their being also in the blood an excess of water, which dilutes the saline or ammoniacal elements, and thereby renders them less able to hold the fibrine in solution. Nevertheless, persons often remain in cachectic and anæmic states for great lengths of time; and they may, in addition, suffer several and prolonged attacks of syncope, without any coagulation of the blood taking place. Indeed, the cases in which the latter occurs are quite the exception; and we therefore search for some other cause to explain the phenomenon in these exceptional instances. It is most frequent when the cachexia has been induced by some inflammatory affection; and we know that the effect of inflammation, more particularly when it attacks the serous membranes, is to increase the amount and the coagulability of the fibrine. The parturient state, which, especially in the early period of lactation, is productive of a similar effect upon the blood, is also marked by a great tendency to clotting of the blood in the venous system. The researches of Dr. Richardson (*The Cause of the Coagulation of the Blood*: 1858,) continued with great assiduity and care through a long period, give strong reason for his view that the fibrine is held in solution by the presence of ammonia; and that its tendency to coagulate in the body is increased, and its coagulation out of the body is accelerated, by a diminution of the volatile alkali of the blood; and it is quite probable that, in the cases which we are discussing, an insufficient quantity of this solvent medium is one of the proximate causes leading to the clotting of the blood in the vessels.* There may be, in addition, some alteration in those relations of the corpuscles to one another and to the walls of the vessels, which, though not well understood, have an important influence in facilitating the circulation of the blood.† Certainly, there seems no good reason to attribute

* The researches of Scherer and Lehmann (*Physiological Chemistry*, i. 97) show that the blood sometimes exhibits an acid reaction in the puerperal state: the acid present is supposed to be the lactic. This may be associated with the fact that I have often observed the skin to be remarkably dry in cases in which the blood coagulated in the vessels during life. An incipient decomposition of the blood is regarded by Zimmermann to be one of the chief causes of its coagulation.

† The commencement of the clots must, doubtless, be attributed to influences affecting the fibrine rather than the corpuscles, because at the parts where they

the affection to an introduction of pus or other morbid fluid into the circulating current.

The diagnosis of the disease is easy. Edema of the limb is often the first symptom. This may be attended with, or preceded by, uneasiness in the course of the affected vessels; and there is enlargement of the superficial veins, with, perhaps, induration of some of them. When the femoral vein is affected, the inner side of the thigh is sometimes swollen in a marked manner. The integuments usually remain white; occasionally they are inflamed in patches, or in a more diffused manner; and occasionally they are mottled by purplish spots, like petechial spots, or like those resulting from ecchymosis. Mortification rarely or never results from this cause alone. (Virchow, *Handbuch der Speciellen Pathologie und Therapie*, i., 171.)

I have already said that the affection is rarely attended with any serious consequences. It does not commonly seem much to aggravate the patient's condition, or to diminish his chance of recovery: indeed, I have sometimes observed an amelioration in the general condition of the patient to be coincident with the swelling of a limb which indicated an obstruction in the great vein; as though the general mass of the blood had become thereby relieved of a certain quantity of its redundant fibrine, and was consequently better fitted to minister to the healthy nutrition of the body. If the obstruction of a vein occur during the course of an inflammatory disease, it generally takes place when the disease is subsiding: it may, therefore, be regarded as an attendant on recovery, though it is an evidence of a low or cachectic state of system. I may again remark, that it seems to have no relation to the malady called "pyæmia"; and though necropsies prove that it is sometimes associated with the formation of clots in the pulmonary arteries, I have not in any case had clinical evidence of its being followed by that formidable affection.

Nevertheless, it is a dispiriting, tedious malady; it retards the restoration of the patient, keeps him confined to his bed, and causes much annoyance and apprehension. The liability to its occurrence is to be borne in mind as a reason against having recourse to depletion or purgation, or other measures

are first formed they are usually composed almost entirely of fibrine. Nevertheless, it is most probable that changes in one of the constituents of the blood are attended with corresponding alterations in the others; and the analogy drawn from what is observed in inflammation and in pregnancy, suggests that an increase in the coagulating tendency of the fibrine is accompanied by an increase in the adhesive qualities of the corpuscles, which would materially contribute to the formation of clots, and which may, indeed, sometimes be the immediately originating cause of them.

which may exhaust the patient, or draw away the saline and watery ingredients of the blood, in the latter stages of an inflammatory or febrile affection. I have given ammonia in some cases in which I thought there might be a predisposition to the formation of clots; and, where the general condition of the patient is likely to be benefited by the use of such a medicine, we should not ignore the evidences which have been afforded of its influence in retarding coagulation of the fibrine. If given in a pure form, it is probable that some of it will enter the blood; and that it will operate in the living vessels, more or less, in the same manner as it is found to do when mixed with blood which has been removed from the body. When the blood has begun to clot in the veins of a limb, I do not think that much good results from any particular local treatment. The affection runs a certain course, and, if the disease upon which it is an attendant do not prove fatal, will gradually subside spontaneously; and the veins usually become clear again. Considering the nature and cause of the malady, we should be unwilling to resort to the use of leeches. Nevertheless, I have known decided relief follow their application when the pain and inflammation around the vein was considerable. Fomentations are sometimes attended with comfort.

Of the instances which I have seen, the greater number have been in males.* Nevertheless, it appears to be the same condition of the veins which in women, after delivery, usually constitutes the disease known by the name of "phlegmasia dolens." The cause of the disease, and the results disclosed by dissection, appear to correspond very closely, whether it be developed after parturition, or in the course of an illness; and the name "phlegmasia dolens in the male" has, accordingly, been applied to it by Sir H. Hallford (*Medical Gazette*, x., 172) and others. Phlegmasia dolens most frequently occurs *after* parturition at that time when the fibrine of the blood is found to be most abundant, viz: during the early period of lactation; and it is most common in women who are weak at the time of delivery, or whose strength has been reduced by flooding, and especially in those in whom there has been, in addition, peritonitis or some inflammatory affection of the chest. Moreover, when a fatal result has followed, it has commonly resulted, not from the condition of the veins, but from some other cause.† It must,

* Of forty non-puerperal cases tabulated by Dr. Mackenzie (*Medico-Chirurgical Transactions*, xxxvi., 235) about two-thirds were females, and one-third males.

† See paper by Dr. Davis, who first pointed out the true nature of this disease. *Medico-Chirurgical Transactions*, vol. xii.; also papers by other writers in the

however, be observed that, in phlegmasia dolens, the pain is usually more severe, and the disease, on the whole, is of a more acute nature than in the ordinary obstruction of the veins: it seems sometimes to originate in a morbid condition of the uterine veins, and is sometimes attended with, or productive of, those inflammatory and suppurative affections in distant parts which are attributed to a morbid condition of the blood.

Indeed, phlegmasia dolens would seem to occupy an intermediate position between the simple and comparatively innocent obstruction of the veins, which we have been considering, and the more severe and dangerous affection of the veins, which has been described by Arnott,[‡] and others, as an occasional attendant upon wounds and injuries. The changes which occur in the veins, and in the blood contained in them, seem to be much the same in the three classes of cases, except that in the traumatic variety the inflammatory symptoms are commonly more severe. And there is the further important difference, that in it we are liable to encounter that alarming, and commonly fatal train of symptoms which is supposed to depend upon a purulent infection of the blood; whereas, in the ordinary obstruction of the veins, as I have already said, such concomitants are little to be apprehended.

The purport of the foregoing remarks may be condensed into the following summary:

1. The great veins are very liable to become obstructed by clots forming in them when the patient is greatly debilitated, and when the circulation is enfeebled—by inflammatory affections, by discharging abscesses, difficult labors and other causes.

2. The clots result from an altered state of the blood, disposing the fibrine to solidify in those parts of the veins which offer the greatest facilities for its so doing.

3. The inflammation of the veins is a consequence of the presence of the clot, and is chiefly confined to their outer coats, and to the surrounding cellular tissue.

4. The clots may soften and become intimately connected with the walls of the vessels, and may lead to the complete

same *Transactions*, and in various medical journals. Dr. Simpson, in his lectures recently published in the *Medical Times and Gazette*, calls attention to the fact that in some well marked cases of phlegmasia dolens the veins have been found quite healthy

[‡] *Medico-Chirurgical Transactions*. xv., 46. Mr. Arnott remarks, and I think he was the first to call attention to the fact, that the inflammatory changes are usually limited by the passage of a current of blood; where a trunk is concerned, the boundary line being the entrance of a branch, and where a branch is concerned, the boundary being the junction of this with the trunk.

and permanent obliteration of their canals: more commonly, however, they are removed, or shrink into delicate bands or fibres, which offer little or no obstruction to the circulation.

5. The affection rarely leads to any serious result. It may be associated with so-called pyæmia; but has no necessary or frequent connection with it.

ii. *On the Formation of Clots in the Pulmonary Arteries.*

There can, I think, be little doubt that the formation of the clots in the pulmonary arteries, in these, and other like cases,* is due to the same causes as the formation of the clots in the great veins; that is to say, it is due, primarily, to an increase in the coagulative tendency of the fibrine of the blood, and, secondarily, to some facilities which the vessel offers for that coagulation to take place. With regard to the primary cause: the pulmonary clots have been found chiefly, if not exclusively, in cases where the vital powers have been lowered by some other disease; in short, in cachectic states, especially where an inflammatory affection was superadded; and after confinements; that is, in precisely the same conditions as the venous clots. Moreover, the clots are often found in both situations in the same patient, as in Cases iv., v., vi., and vii.†

With regard to the secondary, or immediately inducing cause: it has not been satisfactorily shown in any one instance that the clot was preceded by, or attributable to, disease in the coats of the vessel. The discoloration and roughening, where it was present, was evidently due, as in the case of the veins, to the presence of the clot, and was not the cause of it.‡

It appears, from the above related cases, and others which have been recorded, that the clots begin to form, in some instances, in the smaller branches of the vessels; and that in these instances there is often some obstruction to the circulation in the artery, caused by inflammation, pulmonary apoplexy, or other cause which must tend to promote the settling of the fibrine. In other cases the affection commences in the larger branches, or in the main trunk; and in these the spot at which the first deposit takes place is usually at or

* Baron. *Archives Generales de Medecine*, ii., p. 1, appears first to have directed attention to the subject. Paget, *Medico-Chirurgical Transactions*, ix and x. Omerod, *Medical Gazette*. Virchow, *Archiv.* x., 225. (In the case related here, the blood in the heart was fluid.) And *Handbuch der Speciellen Pathologie*, Bd. i.

† Virchow, *Froriep's Notizen*, xxxviii. 35. remarks that in only one case out of eleven, in which clots were found in the pulmonary arteries, did he fail to discover them in some other part of the venous system.

‡ Kidd, *Dublin Journal of Medical Science*, xxii., 376, attributes the affection to inflammation of the pulmonary artery. Baron alludes to the absence of an inflammatory condition of the vessel in the case described by him. Nevertheless, in some other cases, to which he refers, he conceives that inflammation of the wall of the vessel led to the formation of the clots.

near the root of the lung. In this situation the pulmonary artery breaks up at once into a number of branches, which radiate off from it, at different angles, to the several parts of the lung. Consequently, a large extent of surface is presented to the blood, and there are numerous angular projections into the current; both which conditions are calculated to induce the coagulation of the fibrine. It must also be remembered that the rate at which the blood travels through the pulmonary arteries is subject to considerable variations, depending, partly upon the alternating contraction and repose, and the varying force of the contraction, of the right ventricle, and partly upon the vicissitudes of respiration; and both these sources of disturbance become more marked in those enfeebled states with tendency to fainting, in which we have found that the fibrine has a peculiar tendency to settle. In such states the circulation in the vessel must always be feeble; and, probably, the current is sometimes absolutely suspended in certain portions of the artery, or in the main trunk, for short periods. Moreover, the venous blood seems to exhibit an increasing tendency to coagulate in the body as it approaches the lungs, and therefore may be presumed to acquire the property in the greatest degree in the pulmonary arteries.

At any rate, the clots which we find in ordinary *post mortem* examinations are more common and larger in these vessels, and in the right cavities of the heart, than in any other parts of the body. Frequently they are of firm consistence, while the blood in the veins, and in the left side of the heart, is quite fluid.

Virchow attributes the formation of these plugs in the pulmonary arteries to the lodgment there of small clots, or fragments of clots ("emboli") which have been formed in the veins, and have been wafted with the blood through the right cavities of the heart, towards the lungs. These fragments, he thinks, become detached from the ends of the clots which project into the great venous trunks; thus, in any case where the end of a clot, formed in one iliac vein, projecting into the vena cava, a portion may be washed off by the blood flowing against it from the other iliac vein, and, being carried into the pulmonary artery, may lodge upon one of the projecting angles of the vessel, and constitute a nucleus for the formation of a plug. It is not improbable that this may sometimes occur. It must, however, be remembered that the surface of the venous clots is usually quite smooth, and therefore not very likely to be dismembered by the slowly flowing current of the blood; secondly, that in many cases, as in No. I., II., III., there was no reason to suppose that the pulmonary clots

were preceded by clots in the veins; and thirdly, the effects of a preternatural tendency of the venous blood to coagulate are, for the reasons thus given, likely to be exhibited in the pulmonary arteries as well as in other parts of the system.

The pulmonary clots undergo the same changes as those in the veins, provided the patient survives. They may soften (Case III. and V.)* or become firmly adherent to the vessel and disappear, leaving scarcely a trace behind (as in Case VII.); or be converted into threads or bands, stretching from one part of the tube to another. I do not know an instance in which they have caused obliteration of any of the pulmonary vessels; though it is probable that this may take place occasionally in the smaller branches.

The plugging in the pulmonary arteries does not appear so easily to induce inflammation on the exterior of the vessel as it does in the case of the veins of the limb. It is not usually attended with pain or uneasiness, or any symptom which lead, with certainty, to a diagnosis. Hurried, oppressed breathing, with faintness, occurring without any other obvious cause, would make us suspicious of this affection, and should induce us to auscultate in the situations in which a bruit, originating in the pulmonary arteries, would be most likely to be distinguished. I am not aware that a bruit, produced in this manner, has yet been recognized, though it probably would have been discovered had attention been directed to the point during the life of any of the patients.

It is indeed a remarkable feature in the affection that the pulmonary arteries, one or both, in the main trunks, or in the larger branches, may be blocked up to a considerable extent without causing any sign of obstruction to the circulation, or of affection of the lungs, or, indeed, without producing any symptoms whatever. In Case VII., it was clear, from the size of its remains, that a clot must at some time have occupied nearly the entire calibre of the main trunk of each of the pulmonary arteries; yet there had been no symptom of such condition observed during the life of the patient. In Case I., the patient appeared to be in her usual health till the moment of the fatal seizure. In this, and other parallel cases that have been recorded, there can be no doubt that the clots were forming for some time before death, and that sufficient blood found its way by the side of them into the lungs to maintain the circulation and supply the wants of the system.

The sudden death is probably caused by a slight exertion

* In the case related by Dr. Kidd. *loc. cit.*, one of the clots was softened in the middle, and the tissues around the artery, on one side, were condensed and indurated.

following a period of repose. During the repose we may judge the clots are increasing; and the ensuing exertion, by causing a greater demand for oxygenated blood than can be supplied through the impeded pulmonary vessels, induces fainting, which is fatal. The extreme suddenness of the fatal seizure in these cases has suggested the idea that it may have been caused by some displacement of the clots, producing more complete occlusion of the vessels; but this is opposed by the facts that the clots are usually more or less adherent to the walls of the vessels, and show no sign of such displacement having taken place.

iii. *Sudden Death from Occlusion of the Pulmonary Arteries after Parturition*: By DRAPER MACKINDER, M. D.

Two cases were detailed which had recently occurred in Dr. Mackinder's practice. In the first, the patient was thirty-two years of age, and had been delivered of her second child after a natural and easy labor. Seventeen days afterwards, while apparently in good health, she rose up convulsively, said she was choking, and died. On subsequently examining the body, a large, branching, fibrinous plug was found completely stopping up the right pulmonary artery, and its immediate ramifications; while the entrance to the left pulmonary artery gave lodgment to a large and tolerably firm concretion. The heart was rather thin, and the lungs were slightly congested; but there was no further trace of disease about the body.

In the second instance, the patient had an easy labor, and, for a few days afterwards, all appeared to progress favorably, when she imprudently left her bedroom and exposed herself to cold. Shortly afterwards she was seized with difficulty of breathing, gasping, and cold clammy sweats, from which death relieved her in twenty minutes. Permission to make a *post mortem* examination could not be obtained, and hence it could only be surmised that the fatal event was due to the plugging up of some important but smaller vessel than those found obliterated in the first example.

Dr. Graily Hewitt stated that an elaborate essay on sudden death during the puerperal state had been recently published in the *Memoirs of the Imperial Academy of Medicine, of Paris*; but the author of that essay had not thrown any considerable light on the interesting question of the cause of death under these circumstances. The case of the Duchess de Nemours, who died from plugging of the pulmonary artery, would be in the recollection of the Fellows of the Society. From personal inspection of the clot he was able to state that in

that case the clot occupied the pulmonary artery and several of its ramifications, and was so firm that it could not have been formed subsequently to death. Respecting those cases in which sudden death during the puerperal state was connected with the presence of coagula in the pulmonary artery, he would hazard the following supposition as to the causes which lead to the coagulation: The blood was so altered in the pregnant woman as to favor coagulation, in the first place; and, in the second place, the maintenance of the recumbent position, usually rigidly enforced by the medical attendant during several days after labor, favored the stagnation of the blood in the heart and chest. It was not unreasonable to suppose that these circumstances had much to do with the occurrence of this fatal accident.

Dr. Priestly recommended that in all cases of sudden death from occlusion of the pulmonary artery, an attempt should be made, not only to give an accurate account of the thoracic organs, but also of the condition of the uterus and appendages, more especially of the blood-vessels and lymphatics. The researches of Virchow on this subject had conclusively shown the connection between emboli formed in the uterine veins, and plugs found in pulmonary arteries; the value of reports on such cases would therefore be greatly enhanced if the investigation were carried further than the immediate seat of obstruction. He thought it not improbable that in chloro-anæmic conditions of the system, when there is an increase of fibrine in the blood, a very small amount of acrid material generated in or near the uterus, and added to the blood circulating in the vessels, might cause deposition of the fibrine, and consequent occlusion of the vessels.—*Obstet. Soc., London.*

On Inflammation of the Thoracic Duct. By Dr. J. WORMS.

The occurrence of this disease has been anatomically proved by Andral, Gendrin and Velpeau. Dr. Worms has had the opportunity of observing it in a man, forty years of age, in the military hospital of Gros-Caillou. The patient was aroused, in the night of the 15th of December, 1858, by a violent pain, seated deeply in the abdomen, and radiating towards both sides; during the following days, this pain subsided somewhat, but violent fever set in. On the fourth day acute pain in the muscles of the fore arm supervened, the member becoming red and swollen; then the thighs and the calf of the legs became equally painful, and the evil increased from day to day.

The patient entered the hospital on the 25th of December; the sclerotica was slightly icteric; the lips, tongue, teeth, and skin were dry; the pulse full, hard, and eighty in the minute; the abdomen tympanitic, but not painful. The left arm could not be moved; the anterior and posterior side of the fore arm was the seat of considerable tumefaction, and of intense pain. The superficial veins of the whole limb were much distended, and painful on pressure; they presented the peculiarity that it was impossible to make the blood which they contained progress toward the shoulder; while, on the contrary, less resistance was encountered in making it go toward the back of the hand. This circumstance led to the supposition that an obstacle existed to the venous circulation; in examining the whole venous system carefully, no hardness was found except in the left subclavian, which was hard, and rolled underneath the finger. All the other large veins were much distended, and the patient complained of an almost intolerable pain which exactly followed their track. The patient was treated with sulphate of quinia in combination with camphor, in order to combat the general septic condition, and applications of camphorated alcohol were applied to the tumefied arm.

On the twenty-sixth, an aggravation of all the symptoms had taken place; the emaciation had made rapid progress; the patient's look was unsteady; the sclerotica was much more icteric, and the patient was in a state of drowsiness, when not aroused by words. The swelling of the arm was much increased.

During the following days the patient became gradually worse; the icterus became general, and assumed a shade approaching to green; the intellect was troubled; the evacuations became involuntary, and convulsive movements of the muscles of the lower jaw supervened. The patient died on the thirtieth of December.

Autopsy.—All the tissues of the left arm were colored yellow; the aponeurosis was sheathed with an organized fibrinous exudation; all the veins were distended by viscid blood, which was completely discolored, and resembled clear bile. From its passage on the first rib to its junction with the internal jugular, the left subclavian vein was very adherent to the surrounding cellular tissue, and was obliterated by a yellow and hard fibrinous clot.

The whole venous system was distended with uncoagulated blood, and the intestines were much distended by gas.

About the cæcum, and in a portion of the ascending colon, deep ulcerations of the isolated follicles existed, without the glands of Peyer being enlarged. The spleen was triple its normal size, and its tissue reduced to a pulpy mass.

The entrance of the thoracic duct into the left subclavian vein was surrounded by an indurated cellular mass; the duct was filled with a large quantity of phlegmonous pus; the receptaculum chyli measured five centimetres in diameter; its walls were colored light yellow, and adhered to the surrounding cellular tissue; the tunics of the whole duct were thickened, and quite opaque, the internal coat was softened, deprived of epithelium, and presented small and red ecchymotic spots.

The vertebral column was healthy. Numerous swelled glands surrounded the receptaculum chyli; some of the lymphatics joining it also contained pus. The glands from which these vessels proceeded were white and softened in the part in which the lymphatics originated; the opposite part was hyperæmic and harder. The other viscera, and especially the liver and biliary ducts, presented nothing remarkable.

As there is no reason to assume that the pus was carried into the thoracic duct by one of the branches which unite to form it, the disease consisted evidently in a true lymphangitis of the thoracic duct, and of the receptaculum chyli. The inflammation was propagated to the subclavian vein, and caused there the formation of a clot; this explains the symptoms of stasis of the venous blood in the upper extremity of the left side. In regard to the intense icterus which supervened during the last days, M. Worms looks upon it as a general ecchymosis, produced by the alteration of the blood which was not renewed any more by lymph, and by the stagnation of the circulation caused by a physical obstacle; the icterus had been thus produced without any participation of the liver.—*Gazette Hebdomadaire*, May 6, 1859.

The Causes of Pulmonary Consumption, and its Treatment by Superficial or Endermic Applications, and the Inhalation of the Nutrient Elements of the Blood and Tissues. By H. P. DEWEES, M. D., of New York.

The title of this elaborate article well indicates its contents. The author's conclusions are:

1. That pulmonary consumption may be a disease originating in the blood, or in the tissue of the lung itself, or from deranged nervous actions.
2. That tubercle is a product, the witness of blasted "cell growth," originating from the imperfection of the nutrient materials, or from a disturbed elective action inherent to the tissues themselves.
3. That ravages similar to those effected by the pressure and offence of tubercle, may ensue, without being caused by the evolution of, although attended with, tubercle, in portions more or less distant.
4. That structural changes arise from the abnormal influence of the nervous system.
5. That in some, phthisis is hereditary, and in others is self-induced.
6. That it may waste every fat-cell, without great attendant loss of strength, whilst at other times fat is not so entirely consumed as muscular fibre is degenerated and rendered less contractile.
7. That it accompanies, or alternates with, fatty degeneration of the liver and of other organs.
8. That it may be incurrent with albuminuria, diabetes, or that the eruptive diseases may be its developing point.
9. That pregnancy may afford a certain arrest in its progressive ravages; or, by increasing the albuminous composition of the blood, the liability to certain tuberculous dyscrasia might be rendered greater.
10. That the "colliquative" diarrhœa, attending tubercular phthisis, may be preservative.
11. That the enfiling with oil of the true chyle corpuscle is a most important step towards future assimilation.
12. That follicular laryngeal disease may be at the bottom of tubercular degenerations and disorders of the digestive system.
13. That the pulmonary and skin surfaces afford a vast channel for remedial application and nutrient supply.—*American Medical Monthly, May and June, 1859.*

On the Nature, Seat and Relations of Neuralgia. By C. H.

JONES, M. B. Cantab, F. R. S., Physician to St. Mary's Hospital.

The prevalent opinion respecting the nature of neuralgia seems to be that its existence implies an excited or over-active condition of the sensory nerves. Romberg uses neuralgia and hyperæsthesia as convertible terms, and states—"In hyperæsthesia we find that not only the irritation is increased, but that also the irritability of the nerves of sensation generally is exalted both during the paroxysms as well as in the intervals." It is very evident that we can have no knowledge from actual observation of the state of the affected nerve or nerves during the neuralgic attack. We must form our conclusions as best we may from consideration of the attendant circumstances, the *jurantia*, and the relation of the disorder to others. For the moment let us put aside all cases of neuralgia which may be regarded as depending on a local irritation of any kind—either direct, as a splinter imbedded in a nervous trunk; or remote, as a worm in the bowels; or on demonstrable poison generated in the system, or received into it—e. g., that of gout or lead. There remain then all those cases in which the disorder is dependent upon no ascertainable cause, except it be malaria, a draught of cold air, exposure to damp, overwork of mind or body, or some cause of exhaustion. These form a group which may be distinguished as Non-organic Neuralgia. Now, in these the existing debility or prostration is at least very often almost as marked a symptom as the pain. It is also more abiding and unvarying, and the conviction becomes wrought in the mind of the observer, that it is the fundamental state upon which the pain is, as it were, engrafted—the appropriate soil without which the seed would not grow. It is proved by experience that, unless this debility and prostration can be removed, and replaced by healthy vigor, no real progress can be made in the cure of neuralgia. The task is like that assigned to Sisyphus, the patient's and doctor's hope is worn out by ever-recurring relapses. The debility seems in a special manner to affect the nervous system. The brain is languid and dull, and inapt for mental labor; sometimes its function actually fails, and wandering or delirium occurs. Stimuli are beneficial, often very remarkably so, though their effect is temporary. Fresh, pure air, good food, sufficient repose alternating with exhilarating employment, supplemented or aided, if

need be, by nerve tonics, are the real remedies, and just in proportion as they increase the general tone and strength does the patient attain complete recovery and immunity from relapses. On the other hand, just as surely do all causes of debility confirm, increase, and render inveterate the malady.

Now, it may be fairly argued that when the symptoms of debility, and especially of nerve debility, are so apparent, and have so distinct a relation to the particular symptom, this must be itself of like essential character. It can hardly be that the morbid state of the nerve affected can be greatly different from that which prevails so generally throughout the system, especially when we consider the means which avail for the cure of both. Romberg's metaphorical expression, speaking of anæmic hyperæsthesia (i. e., neuralgia), that "it seems as if pain were the prayer of the nerve for healthy blood," is, in all probability, exactly true. The nutrition of the nerve being ill-performed, its structure undergoes some molecular alteration which conditionates pain. What is true of neuralgia from this cause I believe is true of all cases belonging to the non-organic class. Electrical disturbances, damp, cold, malaria, seem to me all to act in the like way as far as we can judge—viz: by deranging the molecular nutritive actions of the nervous structure, and so impairing its function. There are several circumstances which seem to me strongly to support this view. One is the very frequent co-existence of numbness with the neuralgia pain, especially in highly sensitive parts, as the fingers and hands. One cannot say in what the condition producing numbness differs from that producing pain; but it is clear there is no opposition between them; both are often present together, and the numbness commonly remains as the more permanent condition in the intervals of the paroxysms of pain, and even after they have ceased to occur. Now, numbness is evidently a failure of functional action. Of the same import is the occurrence of various degrees of muscular paralysis, which is often associated with neuralgia, evidently as an analogous affection of the motor nerves. It yields to the same treatment. The phenomena of myalgia may also be referred to an illustration of the nature of neuralgia. Here we have a manifest instance of the relation of pain to debility; the sensory nerves of the muscles express pain because they are weak; whatever increases the debility increases the pain, and *vice versa*. The relation of ague to neuralgia is worth considering in

respect to this question. It is certain that neuralgia may be a manifestation of malarious influence just as much as ague, and that the two may replace each other. It may also be affirmed that in neuralgia (non-organic) from other causes, the pain-causing condition of the nerve must be the same as in malarious neuralgia. Now, in an ague fit there is no doubt that the vaso-motor nerves are in a paralytic state, consequently it is probable that in a neuralgic paroxysm the sensory nerves are similarly affected. Lastly, we may allude to the cure of neuralgia by Faradization as an illustration of its nature. The pain of a sensory nerve and the paralysis of a motor may both be removed by the stimulus of the interrupted current. This surely indicates that both states are similar.

Even in organic neuralgia, it seems to me a matter of much question whether the nerve affected is in a state of exalted excitability, or simply of deranged and disordered nutrition. In lead poisoning, the motor nerves of the muscles are certainly paralysed, the pains are diminished (Romberg) "by pressure and friction," and the whole phenomena are indicative of diminished, rather than of increased, vital actions. The curative action of the sulphuret of potassium bath is only intelligible by regarding it as a peculiar stimulus to a great sensory surface, which is reflected from the nervous centres on the paralysed nerves and muscles. That it does produce muscular contraction, at least in some cases, is, I believe, certain. In gouty neuralgia, if we take colicky and spasmodic affections for examples, the disorder is much more of an asthenic than hyperæsthetic character. The pain and suffering attending a characteristic outbreak of gout in the foot have much more the features of hyperæsthesia than the colicky disorder. That a nerve which receives for nutrition, blood poisoned by uric acid should be disordered in its acting, and thrown into a state conditioning pain, is very intelligible, but it can hardly be regarded as having its irritability exalted. On the other hand, the nerve lying in a focus of inflammation, by reason of the active hyperæmia, would seem really to be in a state of hyperæsthesia. Its condition is analogous to that of the nerves of one posterior limb in Brown Sequard's experiments of tranverse semi-division of the dorsal cord, where hyperæsthesia is produced in consequence of paralysis of the vaso-motor nerves, and the resulting hyperæmia.

Again, when neuralgia results from the impaction of a

spiculum of bone, the development of a tumor, or the like, in a nervous trunk, although severe pain may be produced, it does not seem very clear that the nervous irritability is necessarily exalted—i. e., that the nerve filaments, either on the distal or proximal side of the irritant, are more sensitive than they would be naturally. In fact, one would rather expect that the normal function of the nerve would be interfered with. In a case of neuroma recorded by Mr. Toynbee in the Pathological Society's Report for 1851, the only symptom was a diminution of the power of hearing. In the case recorded by Dr. Denmark, where severe neuralgia was produced by a fragment of a bullet imbedded in the radial nerve, no mention is made of the painful parts so unusually sensitive. The same may be said of a case recorded by Sir B. Brodie, in which a femoral aneurism produced pain at the inside of the knee. The following case, from the *Dublin Medical Journal*, May, 1848, bears decidedly on this point:

C. M—, aged twenty-seven, widow, mother of four children, had a neuromatous tumor developed in the course of the median nerve, of the size of an almond, in consequence of the nerve having been divided an inch above the wrist by broken glass. If anything, even her dress, touched the tumor, severe pains shot down to the hollow of the palm of the hand, and upwards to the shoulder. She complained much of numbness and coldness of all parts of the hand supplied by the median nerve. The nerve was cut across, and the neuroma removed. Fifteen months after the operation, she was quite free from pain, and observed nothing abnormal, except a remarkable coldness of the fingers supplied by the median nerve.

In some cases, however, it is certain that the peripheral nervous filaments are truly hyperæsthetic, as in the case related by Romberg (p. 37—44). In this, however, the hyperæsthesia may be accounted for by the increased supply of blood sent to that side of the face, the arteries pulsating strongly and the eye being bloodshot and prominent. The same explanation may apply to many other cases where the neuralgia is complicated with hyperæsthesia. The hyperæmia is conditioned by paralysis of the vaso-motor nerves, which run in company with the sensory, and this very circumstance is a further reason for viewing the fundamental condition of neuralgia as one of paralysis rather than excitement.

From the considerations which have been advanced, I

am led to conclude, that in the majority of cases neuralgia essentially implies a lowering of the vital power and functional action of the nerve, not an increase. There are, however, certainly cases in which the painful parts are not manifestly hyperæmic, but are yet excessively tender, and intolerant of the least pressure. In these it is clear that the excitability of the nervous apparatus is morbidly increased, yet I question whether the term hyperæsthesia is properly applied to them. In the state referred to, any, even the least excitement, brings on or aggravates the pain. This certainly implies an undue mobility of the nerve-structure, a readiness to be thrown into the pain-causing condition, but by no means a real increase of sensory power. It is by no means clear that a part in this state would appreciate two points as separate at a smaller distance from each other than it would when healthy. I should not regard such a condition as identical with that induced by partial division of the spinal cord, as in Brown Sequard's experiments, or by strychnia poisoning. I think it probable that in these cases the morbid action is seated more peripherally towards, or in, the cutaneous terminations of the filaments; while in ordinary neuralgia the larger ramifications of the trunks are affected.

From the preceding discussion, we pass to the consideration of the question—what is the real seat of neuralgia—in the nerves or in the centres? Obviously, this is no easy question to answer. According to the law of eccentric phenomena, every sensation of which we are conscious is referred to the peripheral termination of the sensitive fibres, (so Romberg writes.) Bowman and Todd add that the sensation is referred to those parts, and to those only, to which the fibres irritated are distributed. According to this view, then, all appreciation of sensations as referred to any point in the course of the nerve is out of the question. An irritation, wherever set up, must be felt at the peripheral extremity of the fibres implicated, and never in any part of their intermediate course. But there are facts which are strongly opposed to this exclusive dogma, and which seem to prove that a sensation may be referred to various points in the course of the nerve-fibre. If we hit our funny-bone, although no doubt pain and tingling are felt at the peripheral distribution in the fingers, yet the chief agony is in the trunk of the almar nerve at the part struck, and certainly not merely in the skin covering it. The circumstance dwelt on by Valleix, that the specially

painful points in nerves affected with neuralgia are always those where the nerve becomes superficial, is also a proof of a sensation being referred to other points besides the terminal. The same may be said of the pains which patients describe as shooting down along the track of a nerve as the sciatic. These certainly are not located merely in the skin which covers in the nervous trunk.

From these considerations, I am led to admit the possibility of very numerous exceptions to the law of eccentric phenomena, and to believe that pain in a nerve may really indicate by its situation the seat of the irritation or other morbid action. This is a conclusion of some importance to the local treatment of neuralgia. It justifies our empirical habit of applying sedative remedies as near as possible to the seat of pain. But of course we cannot affirm, in any case of pain involving the trunk of a nerve, that the morbid action *may* not be central; the law of eccentric phenomena holds true so far as that central disorder may certainly give rise to peripheral sensation. The only means of certainly distinguishing the site of the pain-causing action is division of the affected nerve. If this arrests the neuralgia, we know the disorder is seated peripherically; if it fails to do so, we know we have to seek more centrally. In a very large number of cases, I fear it must remain problematic as to where the real seat of the disorder is. If—the pain being specially referred to some intermediate spot—jection of opium at that part (subcutaneous) should give more relief decidedly than the same dose at a distance, it would afford ground for believing that the cause of the neuralgia was localized in that spot. In the ordinary way of rubbing sedative liniments on the cutaneous surface over the seat of pain, we have no means whatever of proving a local action upon the suffering nerve, but rather the reverse. For take the case of the sciatic nerve, where pain is acutely felt at the back of the thigh, and notably between the ischiatic tuberosity and the great trochanter: if this is relieved by a sedative application to the covering cutaneous surface, we are sure that the chief action of the remedy must be on cutaneous ramifications of the glutæal, lesser sciatic nerves, and branches of the external cutaneous and other nerves on the front of the leg. These will convey impressions to the spinal centre, not far from the part where the roots of the sciatic are implanted; so that if the neuralgia were of central origin, it is very conceivable that the morbid action might in this way be beneficially modified. But, considering

the depth at which the sciatic nerve lies from the surface, it seems quite impossible that the aconite, chloroform, &c., should penetrate so far through the skin, fat and fascia, or even muscles. There exists some evidence to show that any strong impression made on the centre (such as cauterizing the ear, galvanizing the columna nasi,) through incidental nerves may put a stop to some neuralgiæ.

The relations of neuralgia are of course very different according to the cause which gives rise to it. If, however, we take the commonest kind—which arises from cold, malaria, debility—we must allow that it manifests a very close affinity with non-febrile *rheumatism*. Rheumatic and neuralgic pain are frequently so very similar, that they are only to be distinguished by the action of remedies. Iodide of potassium cures the rheumatic, quinine and iron the neuralgic; while often it occurs that in the same case, after having begun with the former, we have to resort to the latter to complete a cure. The beneficial action, noticed by several recent observers, of muriate of ammonia in neuralgia, can scarcely be dissociated from its remarkable and positive remedial action in muscular rheumatism. The interesting but obscure phenomenon of rheumatic paralysis is closely similar to, if not identical with, the paralysis or paresis of motor nerves which so often forms a part of neuralgi. *Catarrh* is allied to neuralgia by the similarity of its causes, the manifest implication (sometimes to a grave extent) of the cerebro-spinal nervous system, the resemblance of its inflammatory actions to those sometimes accompanying and depending on neuralgia, and in a large number of cases by its “juvantia.” If exhaustion aggravates a neuralgia, so does it also a catarrhal flux; while rest and toning means have an opposite effect. The affinity between neuralgia and *ague* in malarious cases is strikingly apparent; the two disorders so evidently replace each other, that there can be little doubt that the difference is only one of situation; the sensory nerves being affected in one case, the sympathetic system in the other. The therapeutic effects of arsenic and of quinine in *ague* and in common neuralgia, *rapprochent* the two disorders not a little.

A New Mode of Dressing in the Wounds of Amputation. By
M. LAUGIER.

The objections made by the author to the ordinary manner

of dressing stumps with the roller and adhesive strips, are, that the bandage does not fulfil the indication of causing the flaps to unite from the bottom, that its compression, which must be moderate for fear of producing strangulation of the stump, yields to the weight of the limb, placed on the pillow or bed in such a position as tends to separate the lips of the wound, and that on account of its becoming loose it has often to be re-applied. The inconveniences of the adhesive strips are that they push back the fleshy portion of the flaps, and thus tend to favor the protrusion of the bone and the formation of a depot of pus: they sometimes cause erysipelas, and do not give an equable support to the part, which should be made to heal from the bottom toward the edge of the wound, or from behind forward.

With a view to maintain all portions of the flaps in accurate apposition, and to bring about immediate union, M. Laugier proposes to place under the bandage two plates of cork, of two lines in thickness, and of a length and width sufficient to permit it to embrace nearly the whole stump from its base to its apex, and allow it to extend about two and a half to three inches over the free extremity of the stump. Its edge is then digitated and pierced with a number of openings to receive a piece of tape, which brings the opposed surfaces together at the end of the dressing. Previous to applying the cork, the stump is encircled by thick, circular pieces of amadou or tinder, which serve the purpose of rendering the pressure more easy and efficacious, and keeping the digitations of the cork from the parts. A pledget of lint, spread with cerate, is then placed on the wound, and the opposite portions of the cork are approximated by tying the pieces of tape. No sutures are used. The stump is thus enveloped in a firm case, which keeps off pressure from the wound, and permits the patient more easy and free motion. At each dressing, it is not necessary to take it off; the tapes are untied, and cleanliness is effected.

The advantages claimed by M. Laugier are, that the dressing causes union from the bottom of wounds made in amputation of limbs in their continuity, it sustains the fleshy portions against the bone, insures the direction given to the lips of the wound, does away with the inconveniences of adhesive plaster, and, finally, it protects the stump from exterior shocks, and gives greater latitude to the movements of the patients and the amputated limb.—*Journal de Med. de Bordeaux*, June, 1859.

Pirogoff's Osteoplastic Prolongation of the Bones of the Leg, with Exarticulation in the Tibio-Tarsal Articulation—By GUSTAV C. E. WEBER, M. D., Professor of Surgery in the Cleveland Medical College, etc., etc.

Case I.—On the 2d day of October, 1857, I was called upon by my friend Dr. Roeder, to see a little boy of eight years, whose right foot had been badly smashed, a few hours previous, by the wheel of a railroad car. The bones of the metatarsus and tarsus, together with the surrounding integuments, to within one quarter of an inch of a line drawn in front of the ankle joint, from one to the other malleolus, were literally crushed to a jelly. Thus the question as to a primary amputation was very easily settled, and the removal of the foot in the tibo-tarsal articulation agreed upon. The tuberosity of the os calcis was uninjured, and consequently Pirogoff's operation was proposed. A few hours after the infliction of the injury, the boy having sufficiently recovered from the shock, the operation was performed with neatness and celerity by Dr. Roeder, with my assistance. We followed Pirogoff's original plan of dividing the calcaneus vertically, modifying it, however, so far that we removed with the malleoli the articular surface, together with a thin section of the tibia and fibula, also in a vertical direction. This vertical division I recommended instead of the oblique division of the bony structures in question, because it seemed to me that after coaptation disarrangement of the osseous flaps would more easily occur when the line of union of the flaps formed an obtuse angle with the line of action of the muscles of the calf of the leg. Possible spasmodic contractions during reaction seemed to me capable of pulling the remaining portion of the heel upwards and backwards along the oblique line of division of tibia and fibula. We experienced no trouble in bringing the posterior flaps forward, and adapting the osseous surfaces. Three arteries were tied, four strong sutures passed, a few adhesive strips applied, and the stump adjusted by means of a roller to a concave splint, the lower end of which was moulded so as firmly to surround the stump, leaving only the most anterior part of it uncovered. This particular splint appeared to me essential to secure the entire rest of the wound, and avoid the tearing through of the sutures if the muscular contraction should be great. The reaction after the operation was very slight. The whole wound seemed to heal by first intention, when on the fourth day, without a known cause, tolerably profuse

hemorrhage occurred, which, however, was arrested by the use of additional compression more firmly applied. When, twenty-four hours after this accident, the compresses were removed, we found the lips of the wound in the soft parts separated by coagula and suppurating. For about two weeks, suppuration was extensive. It diminished gradually; and six weeks from the day of the operation the little patient came walking into the Amphitheatre of the College building to present himself before the class. The stump was perfectly sound: the union between the bones perfectly firm; and the shortening of the extremity only three-fourths of an inch, accurately measured.

Case II.—A German laborer, aged fifty-eight, a lover of the narcotic effects of alcoholic liquors, was admitted, on the 10th of October, into the hospital wards of the City Infirmary, with gangrena of both feet. The extremities were both tumefied, bright red and very painful to within four inches beyond the malleoli. There was complete mortification of the right foot up the tarso-metatarsal articulation. The toes of the left foot were attacked with superficial gangrene, and covered with dark-colored bullæ. The general condition of the patient appeared tolerably good for so much local inflammatory action; there was only slight febrile disturbance. Ordered locally extensive scarifications, glycerine and cotton, internally light antiphlogistics. During the first few days after his admittance, the gangrenous process slowly extended. The swelling and other symptoms of inflammation, however, diminished. Symptoms of delirium tremens supervened, which lapsed into those of a typhoid condition. Continued local treatment with glycerine and cotton. Applied linen soaked in a strong solution of chlorate of lime over the sloughs. General treatment: opium, cinchona, and acids. About ten days from the time I first saw the patient, the line of demarcation, and the process of suppuration commenced on the right foot, a little above the line of amputation of Chopart. On the left foot the destruction of tissues remained superficial and limited to points somewhat beyond the toes. The general condition of the patient improved gradually, so that on the fifteenth day after the exposure of the cold causing the mischief, amputation at the ankle joint became indicated. I selected Pirogoff's operation. In the presence of the class and several of my colleagues, the patient was placed on the operating table under the influence of ether, and the original plan of Pirogoff followed out.

In trying to bring about the coaptation of the flaps, I met with obstacles. The contractions of the muscles of the calf of the leg were so powerful that, even by a forcible and continued extension and counter-extension, it was impossible to bring the posterior and superior margin of cut surface of the calcaneus to a level with the posterior and inferior margin of tibia and fibula. I therefore was obliged to take another slice from tibia and fibula. (In a vertical direction to the axis of the bones, for the same reason which I gave in the description of the Case No. 1.) When this piece of the bones, about one-fifth of an inch in thickness, was removed, the coaptation required still some force. However, I succeeded in inserting the posterior superior margin of the cut surface of the os calcis upon the posterior inferior one of tibia and fibula; and, using the latter as a fulcrum, and the calcaneus as a short lever, I easily described with it the part of a circle necessary to bring the flaps into apposition. A few sutures then secured the equilibrium of both forces acting upon the fulcrum: For better security, the splint, before described, was applied. The case progressed favorably without much local and general reaction: part of the wound healed by first intention, part by granulations, so that within eighteen days after the operation, the stump seemed sound and well. Upon closer examination, I found the calcaneus still moveable. On the twentieth day two painful abscesses formed, one situated upon the anterior aspect of the stump, and one internally, near the insertion of the tendo Achillis. When these abscesses healed again after a few days, several new ones appeared in succession in the cicatrix, one of which remained discharging for five weeks. On the sixty-eighth day, the stump was perfectly firm, although still tender, so that yet for two months the patient was unable to bear his weight upon it. The shortening was one inch; and now with only a round thick-soled boot, firmly laced to the lower extremity, the patient can walk without much of a limp.

The superficial sloughs of the left foot became detached in the course of the treatment of the stump; and the deficiency, upon the application of a simple ointment, was soon restored by granulation and cicatrization.

Case III.—Mr. A., from Ontonagon, Lake Superior, came in the early part of April, 1858, to our city, and placed himself under my care with caries of the metatarsal and tarsal bones, caused by injuries inflicted with an axe,

some eight months previous. His general condition had suffered to such an extent, and the disease of the bones was so extensive, that amputation was at once decided and agreed upon. The whole foot was swollen to an unsightly shape; the integuments around the ankle were thickened and hardened; and the movability of the joint lessened. Fistulous openings were leading down to the carious bone everywhere, on the dorsum and the planta pedis. With a sound I could push through and into almost all the bones of the tarsus in every direction. When introducing the sound through an opening over about the junction of the astragalus with the scaphoid, I could traverse backwards and slightly downwards softened bony structure until I reached resistant bone. I concluded that the bone of the heel was still sound, and Pirogoff's operation practicable; consequently this operation was performed *lege authoris*. When sawing through the os calcis just behind the sustentaculum tali, I found my anticipation as to its condition verified. The malleoli, however, appeared spongy, and the articulating surface soft. I therefore removed with them a piece of the lower portion of tibia and fibula, about a quarter of an inch thick. The contractions of the gastrocnemii and soleus were not very powerful, but still the coaptation of the flaps impossible. I then removed a wedge-shaped piece from the remaining portion of the calcaneus, after Shuh's proposition, yet to no purpose. I divided carefully the insertion of the tendo Achillis. This seemed to loosen the tension occasioned by an attempt to bring the posterior flap forward somewhat, but not sufficient to achieve the object. Besides, when I brought the flap forward as much as possible, its circulation seemed at once entirely interrupted. I was then convinced that the extremely thickened and hardened condition of the integuments was the obstacle hindering the adaptation, and that only the removal of the bony contents of the posterior flap would finish this operation to the benefit of the patient. After a tedious dissection, the calcaneus was taken away, the arteries were secured, and the flaps united by sutures and adhesive straps.

Notwithstanding severe hemorrhage on the fourth day, and excessive suppuration for nearly two months, the patient obtained, at the end of three months, a sound and useful stump, to which he adjusted an artificial foot, perfect for locomotion and symmetry.

Case IV.—A Swiss laborer, aged fifty-one, came on the

20th of December last, with frozen feet, into the hospital ward of the City Infirmary. His left foot was gangrenous up to the tarso-metatarsal articulation, the line of demarcation distinctly visible at that point all around the foot. The right foot and leg were extremely red and tumefied, with mortification extending up to the line of Chopart, and apparently spreading.

Poverty, privation, bad air and bad liquor had influenced the patient's constitution in such manner before the accident, that the symptomatic irritation soon after presented the irritative character. With a dry, brown tongue, weak, wiry pulse, quick respiration, and an appearance of heaviness and drowsiness, he was brought to the Hospital. Suitable local and internal applications were made, which decreased his constitutional irritation materially. Then the inflammatory process of the right leg also gradually subsided, and the line of demarcation formed anteriorly to within one-quarter of an inch of the right ankle joint, and on the planta pedis, along the line of junction of the calcaneus with the scaphoid.

Ten days after the admission of the patient, I considered his general condition such as to warrant the removal of the spoiled tissues. I consequently determined to amputate, first, the left foot, and afterwards, when the reaction from this attack had, to a certain degree, subsided, the other. The simultaneous amputation seemed to me not advisable, on account of the double shock such a proceeding must necessarily communicate to his already shattered system.

I performed Chopart's amputation, obtaining sufficient covering for the bony surfaces, by making the anterior flap a little larger than common, and the posterior a little smaller.

In about eight days the stump was doing so well, the man had so finely overcome the consequences of the operation, that the second amputation became indicated. The process of separation had at some points cut nearly through the whole thickness of soft parts, the gangrenous mass from the living tissues. The integuments of the ankle joint and its vicinity appeared perfectly sound.

Pirogoff's operation was thus practicable, and neatly performed by my assistant, Dr. H. K. Spooner, after the same plan as in Case No. 1. The coaptation of the flaps was perfect and comparatively easy. This second operation exercised apparently very little influence upon the patient's condition, which remained, with the exception of a little

increase of his symptomatic fever, about the same. He progressed favorably until the fourth night, when all at once severe hemorrhage occurred. The loss of blood was considerable before the nurse became aware of it, and procured the assistance of the house surgeon. This gentleman applied a strong compress over the stump, adjusted it with a roller, and placing his fingers over the femoral artery, awaited my arrival.

When I came, I found the patient very anemic, with a hardly perceptible pulse. He tossed about and screamed from pains in his limb. The bleeding had for some time ceased, and fearing that the bandages caused the restlessness of the man, I removed them. This was not yet quite done when the blood commenced again to flow. Compression of the posterior tibial arrested it instantaneously. This fact would have led me to the ligation of that vessel, if the patient's condition at that time had not forbid all surgical interference, or the use of chloroform. Examining the stump carefully, I found the bony surfaces separated from each other by coagula, at least three-fourths of an inch. The adhesive strips having been well applied, kept the lips of the wound of the soft parts, at a point where the strips lay, in close proximity, but pulled the anterior flap or anterior integuments of tibia and fibula downwards over their sharp edge. In the spaces between the adhesive plaster, the wound was driven apart by coagula. When the compression of the artery was discontinued, blood trickled tolerably fast out of the inner angle of the wound. Having satisfied myself that the hemorrhage could be controlled by pressure, I applied a small, thick compress, about two inches above the stump, over the before named artery, secured it by a roller, enveloped the stump with another, and adjusted the splint. The bandage answered the purpose admirably well, and remained *in situ* for about fifteen hours. During the last three of these, the patient complained bitterly about excruciating pains in the extremity, which, together with his strong pulse, hot skin, and restless behavior, indicated a general reaction. Upon removal of the bandages, the stump and leg presented a sorry appearance. The posterior flap had entirely lost its position, being drawn backwards and upwards, at the same time swollen to an unsightly lump, the space between the flaps filled with decomposing coagula, and the anterior flap turned downwards; the whole leg was tumefied, red, and painful; the integuments over the edge of tibia and fibula, as well as at other points on the limb up

the knee, were bluish discolored. Whether this state of things was owing to the bandages, too tightly applied, or to excessive reaction in tissues whose vitality had been greatly lowered by a former inflammatory process, and by the excessive loss of blood, and generally depraved system of the man, is hard to tell. I am inclinad to believe tne latter to have been the cause, from the fact that extensive sloughs afterwards formed where the bandage could not have exercised any undue pressure, and that no sloughs formed where the pressure was undoubtedly the greatest, as, for instance under the compress over the artery. Then a real tight bandage might have secured the splint in such a way that the posterior flap could not have been retracted. This may be as it will. At the time the bandage was applied we had to arrest bleeding, and had no other avenue for that object open to us, the patient being, as remarked before, in a very critical condition. From the appearance of the whole limb, I was satisfied that our prospects for union of the flaps were rather dubious, even if the patient should survive such alarming symptoms. I left, therefore, the stump to its fate, and looked alone to the inflammatory process and constitutional disturbance.

For two weeks the patient was at the point of death, but gradually the inflammatory process diminished, and with it improved slowly his general condition. The sloughs separated, granulations sprang up, covering the cut surface of the bones and the loss of substance in the soft tissues. In about twenty-eight days, the patient was ready for a third amputation, becoming imperative on account of the impossibility to replace the flap, whose vitality during the whole siege was not in the least encroached upon, or to bring it into any kind of shape for cicatrization.

The left stump, during the height of trouble with the right one, seemed to suffer some, but healed, ultimately, nicely.

The third amputation was performed below the knee; and also of this operation, the patient, in a comparatively short time, got up without further trouble.

Cauterization of Tumors.

At a time at which cauterization is extending its empire and is taking from the bistoury what it had formerly yielded, it is not uninteresting to see how encysted tumors of the scalp are treated in some of our hospitals.

Few diseases have so much exercised the minds of surgeons. Actual cautery, the seton, partial excision with the razor or bistoury, division of the cyst after perforation, different chemical agents, have been in turn proposed for the destruction of these tumors, which, as Cooper has said, are but enlarged follicles, developed to excess in consequence of the obliteration of their neck. The most expeditious process, that which appears preferable to all those in which the bistoury has been resorted to, is the spitting of the tumor, performed, but a short time since, by Dr. Robert de Lamballe. A pointed bistoury, plunged into the growth, divides the latter in two, from the basis to the summit; the enucleation of the two halves is afterwards accomplished with extreme facility. A plain dressing and slight compression suffice for the rapid cure of the wound, which leaves but a linear scar. This *modus operandi* is not more free from disadvantage than other processes of excision with the bistoury, and for this important reason Mr. Jobert has returned to the old method of cauterization.

Cauterization, in reality, is not, as certain quacks have pretended, a new means of destroying wens without any operation of the knife. Chopart's excellent treatise on this subject is known to all as well as the comparative experiments made by this author on the action of the various caustics.

In the last century, Tenon having gone on a visit for some time to the Marquis de Turgot's, relieved several persons there from these cysts, by touching with a straw, steeped in nitric acid, the central point of the tumor. Tenon had seen this process employed by an itinerant practitioner, and, as a judicious observer, he had remarked that the patients recovered without erysipelas, a common accident, which it was sought to avoid by abstaining from the bistoury. But, however, notwithstanding the success obtained by caustics, the knife was resumed, and, in an article published in 1836, on wens, in the *Dictionnaire de médecine et de chirurgie pratiques*, Blandin does not even mention cauterization. Blandin handled the bistoury with admirable dexterity; but, had he not prematurely died, he would have renounced it in the treatment of wens, for, at the end of his career, he one day extirpated a very small cyst from the scalp in a woman of 25 years of age; it was so trifling that the operation was performed in his consultation room. The next day the wound became painful, erysipelas set in, and on the fifth day the patient died.

If caustics were relinquished for so long a time, although Dupuytren acknowledged their advantages, it is because caustic potash and mineral acids were not easy of application or constant in their action. In using them, it was necessary, as Boyer says, to apprise patients that the cicatrix would be extensive and deformed. But this is no longer the case. With Vienna paste, soft or solidified, the eschar can be mathematically circumscribed and a cicatrix obtained, which is almost imperceptible. Mr. Guersant, a very short time ago, destroyed in this manner a small wen in a child eight years of age. He took a piece of adhesive plaster, in which he cut a hole in the shape of a myrtle-leaf, representing in extent half the eschar he wished to obtain; the plaster was applied to the tumor and covered over with Vienna paste. At the end of five minutes, the caustic was removed with a spatula; the skin, which remained bare, was washed, and, on the eighth day, the cyst fell off with the eschar.

Dr. Robert recently related, in one of his conferences, that he had removed wens by that method a hundred times; his process is the same as Dr. Guersant's. That very day, a woman thus operated on in his wards, brought her tumor, which united with the eschar and reduced to very inconsiderable proportions, resembled a flat-headed nail. On the fifth day the eschar still adhered to the wen, but its edges became inflamed and the elimination took place, leaving a bleeding wound which healed in three days. "The eschar," says Dr. Robert, "must be left exposed to the air, patients must walk, attend to their ordinary avocations, without resorting to the poultices or emollients; they need entertain no apprehension of erysipelas or any serious accident whatever." This skillful surgeon has cauterized wens as large as walnuts or apricots; he has removed as many as twelve in the same person. "The question in this case," says he, "being complicated neither by the number nor the size of the tumors."

Professor Jobert has also renounced the knife in favor of cauterization in the treatment of wens, and his destructive process is more simple than that we have just described; this surgeon merely paints the tumor over with Vienna paste, in a slightly liquid state. He recommends that the powder employed in this case should be fresh, a precaution without which the paste is impregnated with the moisture of the air and acts less quickly. We saw, two months since, Mr. Jobert cauterize, in a carpenter forty-nine years old, four wens, three of which were melicerous, and the fourth

atheromatous, of eight years' standing. One of these growths was fluctuant and threatened to burst. All four were covered with a thin layer of caustic, which was allowed to remain on for seven minutes and a half. The patient was taken back to his bed, and, after two hours' repose, he went out bare-headed. The fluctuant tumor became hard and parchment-like, and, instead of coming out, its contents became coagulated. Subsequently the eschar fell off and naught remained but unimportant scars.

Finally, wens may be removed by perforating cauterization. Dr. Alphonse Amussat, who has long used caustics with great dexterity, has destroyed a great number of these tumors by cauterization applied in the following manner:

Taking a stick of Filhos caustic of the size of a piece of solid nitrate of silver and sharply pointed, he perforates the tumor in the middle and upper part, by communicating to the caustic a rotary motion. The cyst being opened, the matter it contains is forced out, and the internal surface of the sac is cauterized with the blunt end of the same stick of caustic. When this is done, a small quantity of the paste of chloride of zinc, in equal parts, is introduced into the cyst and is left there from two to six hours, according to the degree of thickness of the parietes of the latter; the paste is then removed and the tumor is left exposed to the air until its complete cicatrization.

This process, which appears to be less simple than the preceding, has, according to its author, the advantage of cauterizing and of destroying cysts of long standing; in addition to which it transforms them into an inputrescible eschar, which falls off while reparation is being performed, and the falling off leaves after it but a small sore, soon replaced by an insignificant cicatrix.—*Championniere's Journ'l.*

Grave Pneumonia Speedily Relieved by Ergotine.

We recollect having seen Mr. Maisonneuve exhibit with advantage syrup of ergotine in that form of pneumonia which is frequently observed in consumptive subjects, and is attended with sanguineous exhalation. Ergotine is a powerful hemostatic, and we find, in the *Gazette des Hopitaux*, a fresh case of Dr. Thibault, du Pertre (Ille-et-Vilaine), which seems to prove that the sedative virtues of this drug may, in certain varieties of pneumonia, make it a useful substitute for oxysulphuret of antimony and tartar emetic.

In October 20, 1858, Mr. Thibault was summoned to a

patient suffering for four days from pneumonia in the first and second stages. The pulse was full and vigorous, and had risen to 95; oppression was considerable, cough moderate and productive of rusty sputa. Twenty ounces of blood were taken from the arm, and phlebotomy was repeated in the evening. On the following day, eight leeches were twice applied, at an interval of twelve hours, to the left side. On the 22d, slight improvement had taken place, the oppression had decreased, and the pulse had diminished in frequency. Tartarized antimony was prescribed; but, having been rejected by the stomach, was replaced by kermes mineral. On the 24th, the patient was worse, the pulse was small and frequent, at 105; the countenance had undergone an unfavorable change, much prostration was present, and the expectoration had the color and appearance of the juice of stewed prunes. On the 25th, hemoptysis occurred twice, and the patient was troubled with delirium and carphology. For the purpose of modifying the character of the expectoration, indicative of suppuration of the lung, with but slight hopes of attaining his object, Mr. Thibault prescribed the following mixture:

R—Aquaë,	-	-	-	3 5
Ergotinæ,	-	-	-	1 5
Antimon. oxy. sulphuret,				} aa. 3 gr.
Pulveris scillæ,	-	-		
Gum. tragacanth,	-			1 5
Syrupi simplicis,	-			10 5

F. S. A. To be taken in table-spoonfuls every hour.*

Scarcely had the patient taken three or four doses when the appearance of the sputa was changed. They first became rusty, and subsequently merely yellowish, as in common catarrh. Mr. Thibault was also struck with another equally singular circumstance, viz: the decrease of feverishness; the pulse fell from 105 to 80 and 75, without, however, acquiring strength or fullness. The medicine was interrupted and the expectoration again became rusty; but recovered a more healthy character, when the medicine had been resumed twenty-four hours. On November 2d, the patient was rapidly progressing towards health.—*Championniere's Journal.*

*Mr. Maisonneuve exhibits the syrup of Bonjean, which is prepared by the addition of a solution of 2½ dr. of ergotine in one ounce of orange-flower water, to one pint of boiling syrup. This compound contains eight gr. of ergotine for every ounce, and is prescribed in tea-spoonfuls four times an hour, in hemoptysis.

Transplantation of the Dura Mater as a Means of Determining its Periosteal Character. By M. OLLIER.

This paper forms a kind of complement to those we have already noticed as having been read to the Academy of Sciences upon the transplantation of periosteum. While some experimental results, M. Ollier observes, have led a certain number of physiologists to regard the dura mater as a periosteum, clinical observations have not induced surgeons to place much confidence in this membrane for the reparation of osseous parts, which have been removed, whether accidentally or by the trepan. His experimental resections of the cranium have led the author to believe, with several observers, that there are three sources of reparation to the osseous substance—the dura mater, the diploe, and the pericranium. But in consequence of the various difficulties produced by the conformation of the region and the proximity of the encephalic organs, this mode of procedure has not furnished results precise enough to supply a clear and definitive solution. He, therefore, has had recourse to the mode of experimenting which had furnished so peremptory a proof in favor of the theory of the formation of bone by the periosteum, viz: the transplantation of the dura mater to various regions of the body of an animal of the same species. Strips of this membrane, grafted under the skin, in various regions, have given rise to perfectly-constituted bone, possessed of all the anatomical characters of normal osseous substance; and by virtue of this fact we are authorized in regarding the dura mater, not only as a protective envelope for the brain, but as contributing directly to the ossification of the cranium. This property of the dura mater does not continue in the same degree in all ages, diminishing rapidly in proportion as growth is accomplished. Very well-marked at the commencement of life, it has become much less apparent by the time the skeleton has reached its complete development, and is exhibited in a still less degree when adult age is reached. When transplantation of a fragment of the dura mater is accomplished in the adult rabbit, only numerous and independent osseous granulations are produced on its surface. This influence of age explains to us why the facts observed in a man appear so often contradictory, and why surgeons usually only obtain incomplete reparation after trephining. All portions of the dura mater do not possess the property in a like degree, it being only the external

surface of the membrane that does so—the fibrous folds not in contact with bone not being susceptible of ossification on transplantation. The greater proportion of these fibrous tissues at the base of the cranium, added to the difficulty of detaching the dura mater there without tearing it, explains why we obtain in general a more abundant ossification with strips taken from the convexity, than with the fragments of the same size detached from the bone.—*Comptes Rendus*, Tome xlix., p. 206.

Treatment of the Nausea and Vomiting of Pregnancy. By
J. H. WARREN, M. D., *Neponsset.*

How much has been written and said upon this subject, and what a vast catalogue of medicines have, from the most ancient to the more modern times, been recommended and tried as sure specifics; and how often has the most aspiring and faithful son of *Æsculapius* been obliged to disgorge his strong faith in them, as the nauseated patient does the most potent draught administered by his kind hand! External applications over the epigastric region have been often resorted to with a good degree of success. Perhaps the tincture of opium and brandy, or the tincture of opium alone, stands at the head of the external medicines, at least as far as my observations have extended, it having often entirely relieved the nausea and vomiting. I have in some few instances added one drachm of the tincture of iodine to one ounce of the tincture of opium, with benefit. With internal medicines I have had but little success in relieving this distressing complaint. The most efficient I have tried, is the pill of nitrate of silver and opium, recommended by our distinguished and learned friend, Prof. W. Channing. But even this little pill has failed in my hands of accomplishing the desired result.

Of late, applications to the os uteri have been recommended, with a slight show of success; upon what scientific principle, I leave others to discuss, as my intentions are only to mention some, and the success I have had in the use of them. Various agents have been suggested. The tincture of iodine has been favorably spoken of by some authors. I have applied it to the os in a few cases only, as the complaints of the patient, of a metallic taste of the iodine in the mouth, show it to be about as great an annoyance as the sickness we endeavor to remove by its use. I can conceive, however, that this agent might be of vast

value in cases of scrofulous disease in this organ. Otherwise, I should have but little faith in the use of it, so long as we can have recourse to other agents less objectionable in their effects, and equally as potent as the iodine, in assuaging the distress of this unpleasant complaint, and more especially if there exists any inflammation of the mouth and neck of the womb, a very common concomitant affection now-a-days, as every practitioner knows, with pregnancy. What is better here than the nitrate of silver? Its result in reducing inflammation and ulceration is an established fact, and it will prevent nausea and vomiting in pregnancy, if properly applied to the os and cervix uteri, as well as iodine, and that without the unpleasant taste in the mouth.

In passing upon applications to the uterus in these cases, I would take the liberty of calling attention to the application of the tincture of benzoin and chloric ether, which I have been using with as good an amount of success, as any agent I have employed, and it has the advantage of being very simple. I would particularly recommend it where there is much neuralgic pain and excessive leucorrhœal secretion. I have found nothing so beneficial in these last named accompaniments, as this preparation. By adding a few grains of acetate of morphia to this, it will also be found a very efficient remedy in painful menstruation, and will seldom fail, in the practitioner's hands, of giving ease and comfort to the female, during this, her much-dreaded period, if applied just before or at the commencement of menstruation. It should be painted upon the os and cervix once in three or four days; and may be continued throughout the whole period of pregnancy without any unpleasant effects. My formula for this preparation :

R—Tinct. Benzonii c., 5 ii;

Chloric Ether, 5 i;

Acet. Morphia, grs. ii.—M.

These applications should not only be made to the mouth of the womb, but should extend to the neck, if we wish to gain a favorable result from them. If the silver be used, it cannot be applied too lightly; a very slight penciling is all that is required. If applied so as to produce sloughing and discharges, it will fail of accomplishing our desires. Are not the good effects of these applications to be accounted for, from the fact that they form a protecting coat over the congested and abraded uterine mouth and neck, that may take place in the impregnated uterus, thereby allaying the

irritation of the external uterine nerves and vessels, by equal pressure and protection from all external influences of vagina and other sources? I should be happy to hear the result of the use of these preparations in the practice of other medical gentlemen.

In addition to the above, I have used injections of *Ferri alumenis*, ʒ i; *inf. opii*, ʒ ii; *aquæ dist.*, ʒ viii. M., with some benefit. These can be used where it would not be expedient to employ the speculum. I sometimes substitute iodide of zinc for the alum. This is more applicable to those cases where there is slight spasmodic action in this organ, or in the neck of the bladder. I use five grains of zinc to the ounce.—*Boston Med. & Surg. Journal*.

On the Treatment of Whooping-Cough by Diluted Nitric Acid. By JOHN ATCHERLEY, M.R.C.S., Eng.

I wish to direct the attention of the profession to the diluted nitric acid, in the treatment of whooping-cough. It has already been employed in whooping-cough to some extent, and was first recommended some years ago, by Dr. Arnold, of Montreal.

Having had abundant opportunities during the last two years, of testing its efficacy, I may be permitted to speak with some degree of confidence as to its value. I have confined myself exclusively to its use in every case I have had to treat throughout that period, and I can affirm that as the ordinary duration of whooping-cough has been computed to average ten weeks, in defiance of every method of treatment that had hitherto been adopted, the diluted nitric acid effects its removal in less than three weeks, except in cases where its course has been interrupted by some serious complications.

Any medicine capable of abridging the duration of a disease, whose fatality is in proportion to its continuance, must be of incalculable value; and I am convinced that when it becomes more generally used, it will meet with the concurrence of the profession, and will hold a high place, and be the cardinal remedy, if not supercede all other medicines in whooping-cough.

In prescribing the diluted nitric acid, I usually begin with five minim doses every three hours, say for a child six months old, and gradually increase the dose, in proportion to the age, to fifteen minims every second hour, should the paroxysms become aggravated, or of more frequent recurrence. When the intervals become lengthened, which generally happens

after the second day, the medicine may be given less frequently; but it is of importance that the acid should be continued ten days after all symptoms of the disease have subsided. From the neglect of this precaution, I have seen the cough return with all its former violence when the medicine has been abruptly discontinued; therefore, it should be given in moderate doses three times a day, after all traces of the affection have passed away.

The form I generally use is the one originally suggested, viz: diluted nitric acid, compound tincture of cardamoms, syrup and water. This is always taken without the slightest reluctance, as it is agreeable to the taste—a great consideration in prescribing a medicine for children, which requires to be continued for some length of time.

In conjunction with the above treatment, I have invariably employed a stimulating embrocation to the back and chest, night and morning, consisting of one ounce of camphor liniment, and two drachms of spirits of turpentine.

Of course, it is necessary as in all diseases of the respiratory organs, that proper attention should be paid to the state of the bowels, regulation of temperature, clothing and diet. I have also seen great benefit derived from the inhalation of the fumes of burning nitre-paper; two pieces of about four inches square are burnt in the bed-room on retiring to rest, and one piece burnt occasionally in the room occupied by the child in the day-time, appears to shorten the paroxysm, and to deprive it in a great measure of its spasmodic character, rendering it more like the cough of ordinary catarrh. Chloroform is the best anti-spasmodic that can be used during the fit, but parents have a great dread of its effects, unless administered by the medical attendant; but from the apparent simplicity in the fumes of burning nitre-paper, they are readily induced to give it a trial.—*Medical Times & Gazette*.

Reproduction of Bone.—Dr. E. S. Cooper reports in the *St. Louis Med. and Surg. Jour.*, (*New Orleans Med. News*), a very interesting case in which he removed seven inches of the shaft of the tibia, and in which the bone was reproduced. One of the reasons given for the particular operative procedure resorted to, is as follows: “Because complete reproduction of bone is always effected much more rapidly and with much more certainty, if two extremities of bone remain after exsection, than when there is one only.”

EDITORIAL AND MISCELLANEOUS.

American Contributions to Medical Science.

We cordially give place, in our editorial department, to the communication of our valued contributor, Prof. L. A. Dugas. The proposition to establish an AMERICAN ABSTRACT OF MEDICAL SCIENCES, which shall be both *comprehensive and compendious, accessible to all readers everywhere*, strikes us as one of the most valuable suggestions which can be made towards improving the standard and elevating the character of American Medical Literature. Foreign journals, both British and Continental, have the most mistaken views as to the value and importance of American contributions to medical science, and, blind to their own interests, but few of them care even to exchange with their American *confreres*. Most of them ignore the medical literature of this country altogether, while others affect to disbelieve the reports of American writers, and chide their more liberal brethren for cumbering their pages with extracts from American publications.

The Dublin Medical Press, the most liberal of the Foreign Medical Periodicals, has had recently to defend itself against the charge of impropriety, for its frequent extracts from American journals. This journal has evinced a most appreciative regard for American contributions, and were the proposition of Dr. Dugas, to establish an annual or semi-annual abstract, carried out, foreign journals of a *less* liberal spirit would be compelled to acknowledge the claims of their Professional brethren on this side of the Atlantic.

It is true that several of our Monthly Journals, as well as the Bimonthly and Quarterlies, have recognized the propriety of such a collection; hence we have in some of them monthly summaries of the Progress of Medical Science. These add to the value of the respective journals, and are of benefit to their readers, but will not answer in the place of the publication now insisted on by Dr. Dugas. We offer no further arguments, as we consider the advantages of the enterprise are most ably set forth in the following letter of our correspondent, to the Medical Association, during their session of 1858, at the American Capitol:

AUGUSTA, Ga., Feb. 10, 1860.

Messrs. Editors :—The accompanying communication was sent to the Medical Association last year, but, from some accident, was never laid before that body. Having kept a copy of it, I am enabled now to tender it to you for insertion in your valuable journal, hoping that it may

receive the approbation of your readers, and that some one may bring the subject before the Association at their next meeting, I remain,

Yours, very truly,

L. A. DUGAS.

To the President and Members of the American Medical Association.

GENTLEMEN:—The object of this communication is respectfully to direct the attention of your body to the importance of establishing a medium in which may be concentrated the working of the Medical mind of our country. This is essentially the land of printing; every department of our social system has its organ of publicity; merchants, politicians, theologians, legislators, agriculturists, naturalists, mechanics, lawyers, physicians, and even charlatans; all vie with each other in the endeavor to disseminate their views and principles by means of the great engine of the press. In no country is there more mental activity among physicians than in this; in none are there as many Medical periodicals published; and these are multiplying in a direct ratio with the increase of our population. Yet, it is notorious, that the contributions of our physicians to the common stock of knowledge are less known to the scientific world at large than those of any other people. The very fact that we have a multitude of periodicals renders it very difficult, if not impracticable, for any one, however diligent, to keep pace with the press and to garner up what may be valuable in the original columns of each journal; and the difficulty of establishing and keeping up a system of exchanges with European publications debars most of our contributors from the privilege of being read or quoted abroad. While, therefore, the multiplicity of Medical periodicals has a natural tendency to increase the number of writers in our country, it correspondingly lessens the probability of their views becoming known beyond the more or less restricted limits of the circulation of their local medium of communication. The American practitioner cannot become acquainted with the writings of his own countrymen without looking over a number of journals well calculated to discourage him, even if he could afford to subscribe to them all. This difficulty is still more grievously felt by our systematic writers, who would like to do full justice to their countrymen, and yet find it almost impossible to get access to complete sets of our periodicals for reference. Hence it is that no books or treatise can be a faithful exponent of American contributions. If it be thus difficult for our own authors to do us justice, it must be still more so for those of Europe, who supply the reading world with most of its books.

In Europe, neither writers nor readers labor under these disadvan-

tages. The comparatively small number of their periodicals, and the semi-annual publication of Retrospects and Abstracts of their contents, renders it quite easy for any one of ordinary industry to be informed of all their useful views and facts. Now, with the exception of the few copies we send to Europe in exchange for their journals, we may say that our periodicals are entirely unknown in foreign countries, whereas several of theirs are reprinted in the United States and extensively patronized. The writings of Europeans are thus not only brought directly to our doors, but our own journals cull most assiduously from them every paragraph supposed to possess the least interest, while our local periodicals are actively engaged in heralding the achievements of Europe, those of domestic origin too often remain unnoticed. In addition to the extensive circulation among us of foreign journals and reprints, the publications of Braithwaite and Ranking give a degree of permanency to their papers, which is denied to our own, inasmuch as those semi-annual collections are devoted to the propagation of European views and are almost entirely silent with regard to what is said or done in America. Take them up, number after number, and you will look in vain for any evidence of the mental activity to which we have referred, can it be that we say or do nothing worthy of permanent record? Foreigners are perhaps not so much to blame in this matter, when our own periodicals for various reasons, make such a meagre showing for us in their selections from domestic cotemporaries, while some of the veriest puerilities of foreign origin will be found going the round in every journal of the land.

We need a remedy for the evils pointed out, and, for some years urged, its importance through another channel. I now beg leave to bring the subject before the American Medical Association, in the hope that, under the auspices of so authoritative a body, a plan may be adopted that will be effectual, without interfering with the interests already involved in local journalism. Let a semi-annual work be published by subscription, bearing the title of "American Contributions to Medical Knowledge," or any other of similar import. Let it consist: 1st of a reprint, partial or complete, of all such papers contained in the "original department" of American Medical journals as may be deemed worthy of permanent record: 2d of Reviews of American books on medicine and its collateral branches; 3d of abstracts from the original matter of our journals that may not appear under the 1st head; 4th of Medical intelligence, biographical notices, &c., and lastly, of a complete list or index of the original articles of every American medical journal issued during the preceding six months. To this might be added, whenever

convenient, general indexes of the whole series of the various American Medical periodicals. The lack of a general index to our journals, makes the labor of consulting them exceedingly onerous, and doubtless constitutes one of the greatest impediments to the diffusion of American views in systematic works.

The publication of such a semi-annual volume would be of incalculable value as a book of reference; it would be sought with avidity by European as well as by American writers, and would contribute immensely to the elevation of the medical profession of our country in the estimation of the world. As it would contain none but American matter, it would not militate against the other periodicals of our country, which would continue to be taken for foreign intelligence as well as from local considerations. The semi-annual proposed would give them notoriety abroad, without diminishing their local circulation. Let the conductors of such a publication be men of industrious habits as well as of competent abilities, whose sole object will be to furnish us a complete and impartial reflex of the workings of the American medical mind during the preceding six months. If well conducted, such a work would enable us to become acquainted with the views of men of ability in every section of the country, and would at once become a standard book of reference throughout the world. Writers might then enjoy the satisfaction of contributing to the literature of their own immediate neighborhood, and still feel that in doing so, their labor would not necessarily be restricted to the field of their local periodical. With the consciousness that merit would entitle their papers to a place in the proposed national work, they would be actuated by an incentive which they do not now experience, and would strive to do themselves credit abroad as well as at home. Such a work, I repeat, would not conflict with the interests of existing periodicals, because it would publish no paper that had not already appeared in a local journal, with the exception of reviews. Physicians would naturally continue to support the journal of their own section, and take, also, the national work for more extended information, as they now do the reprints of European retrospects.

For the purpose of carrying out these views, I would now respectfully submit to the consideration of the Association the following resolutions:

Resolved, That a committee of — be appointed by the Chair for the purpose of drawing up a plan for the publication of a work designed to carry out the views above expressed, and also of securing the services of suitable persons to conduct its publication by subscription.

Resolved, That the members of the American Medical Association will use their influence in promoting the success of such a national work.

I am, very respectfully, your ob't serv't,

L. A. DUGAS.

NEW JOURNALS.—We have received copies of the following new Medical Periodicals, not heretofore noticed in our pages :

1st. *The Chicago Medical Examiner*, a monthly journal, devoted to the educational, scientific and practical interests of the Medical Profession. Each number contains sixty-four pages of reading matter, and is edited by N. S. Davis, Professor of Principles and Practice of Medicine and Clinical Medicine, in the Medical Department of Lind University, and E. A. Steele, M. D., of Chicago. "The Chicago Medical Examiner is the property of its Editors, and as independent of all schools, clubs or cliques, as *any other** medical periodical in the United States."

2nd. *The Kansas City Medical & Surgical Review*—pp. 48. Edited and Published by G. M. B. Maughs, M. D., and T. S. Case, M. D., in Kansas City, Mo.—The January number contains an original communication from each of the Editors. 1st. "The Medical Topography of Kansas City and the adjacent country, by G. M. B. Maughs, M. D.;" and 2d, "On the Origin of Malarious Diseases, and the action of Malaria in the System, by T. S. Case, M. D." The editorial, selected and miscellaneous matter are highly interesting. We cordially wish its editors full success in their new enterprise.

3rd. *The Dental Cosmos: A Monthly Record of Dental Science*.—Each number contains about fifty-six pages of reading matter, contributed and selected principally in reference to the Dental Profession; but there will be found in its pages much that will interest medical men, and which, as general practitioners and as surgeons, should engage their attention. American Dentists, we think, were the first to take the initiative in founding colleges for regular instruction in their department of science, and consequently American practitioners of the Dental Art, as a general thing, are better instructed and stand higher, as a class, than the Dentists of any other country on the globe. The establishment of State and National Dental Associations will, of course, tend still further toward the elevation of the Profession, and render scientific, a branch of practice which, up to a recent period, has been proverbially empirical, and often, doubtless, highly injurious to society.

The Dental Cosmos is published in Philadelphia, by Messrs. Jones and White, and is edited by the following gentlemen: J. D. White, M. D., D. D. S., J. H. McQuillen, D. D. S., and George J. Zeigler, M. D. The work is well illustrated in several of its numbers, and of excellent typography. The ability with which it is conducted will doubtless secure it an extensive patronage.

*Italics ours.

It affords us much pleasure to place the above new journals upon our exchange list, and we shall, from time to time, draw from them for the benefit of our own readers.

Epitome of Braithwaite's Retrospect of Medicine and Surgery.—We have received the title page and specimen sheets of the above valuable work. "The design of the author is to enable the practitioner to refer at once to the modern treatment of all varieties of disease—to refresh his memory in cases of emergency—and to speedily acquaint himself with such specific applications as would otherwise require considerable research to acquire from the original volumes." To be edited by Walter Wells, M. D., and published by Charles T. Evans, of New York. It will be issued in five parts, at one dollar each, making, when completed, a large octavo volume of over 1500 pages.

The *cream* of Braithwaite's Retrospect must be rich indeed. The work cannot fail to secure an extensive patronage.

The Microscopist's Companion—A Manual of Practical Microscopy. By John King, M. D.—We have received specimen pages of the above work, now in process of preparation. On the appearance of the book, we will furnish our readers with a more extended notice.

Caustic.—Dr. G. W. Spence recommends, in the *Lond. Lancet* for December, the following formula for a paste of chloride of zinc: "Dissolve fifty grains of prepared chalk in two drachms (by measure) of commercial muriatic acid; dissolve a hundred and fifty grains of sulphate of zinc in two fluid drachms of boiling water. When required for use, mix the two solutions, and the result will be a paste weighing nearly an ounce, and containing about one-sixth of pure chloride of zinc."

Leather and Metal.—The following is said (*Alg. Polytech. Zeit. and Druggist*), to be a very efficient method for fastening leather upon metal: "The metal is washed with a hot solution of gelatine, and the leather, previously steeped in a hot infusion of gall-nuts, pressed upon the surface and allowed to cool. It then adheres so firmly that it cannot be separated without tearing."

Cancer.—M. Sedillot, of Strasburg, strongly recommends (*Ibid.*) the use of the actual cautery for destroying epithelial cancers; removing as early as possible (under chloroform) the healthy parts immediately surrounding the cancer.

Sickness of Pregnancy.—Dr. C. E. Bagot calls attention (*Dublin Med. Press*, Oct. 12, 1859) to the employment of calomel pushed to slight salivation as a most successful mode of relieving this sometimes intractable and dangerous affection; a practice which he recommended in 1846. In that year he had under his care a woman labouring under that extreme form of sickness from pregnancy which placed life in the most imminent jeopardy. I had tried all the usual remedies suggested in such cases, and found them one after another to fail in producing any relief. Although there were no symptoms whatsoever which would make me suppose that any inflammation was either the proximate or remote cause of the sickness, I resolved to try the effects of mercury, and having had some experience of the powers of calomel in allaying other forms of vomiting, I fixed on the administration of this preparation, steadily persevering in its use until her gums showed appearances of salivation, which they did in a very short time. This treatment resulted in the best effects. Immediately that slight salivation took place, the vomiting, previously so persistent, at once ceased, food remained on the stomach, the patient rapidly recovered, and was in due time safely delivered of a full-grown infant.

The sickness of this patient, Dr. B. says, was of the very worst form, her symptoms were so urgent that he despaired of her existence being prolonged; her prostration of strength was excessive; her emaciation extreme; her pulse a small thread; she had no tenderness in the epigastrium; neither had she pain in the region of the womb, nor the least uneasiness on pressure over that organ; she had no febrile nor inflammatory symptoms, and yet the most complete relief followed the exhibition of the mercurial pushed to slight salivation.

In two subsequent pregnancies this patient suffered equally from the same urgent symptoms, and on both occasions she was relieved by the same medicine.

Neuroma.—According to Prof. Parker, (*N. Y. Med. Press*), neuromatous tumors are divided into three classes: “1st. Those which are formed upon the trunk of the nerve; 2d. Those connected more particularly with the extremities of the nerve, (painful tubercle,) as upon the fingers, toes—in fact, all situations where there are terminal branches; and, lastly, the neuromata of stumps.”