Ammelburg showed it to be non-toxic in large dosage. But it acts as a powerful germicide, and constitutes an odorless non-toxic substitute for iodoform. It is used as a dusting powder or in five to ten per cent. collodion or ointment, or, as the sodium salt, in one- or two-per-cent. solution. With magnesia it forms a valuable application for burns and eczema. The insoluble calcium salt is used for making "loretin gauze." Fenzling refers to its special applicability in veterinary work. Nicati employed it with boric acid in conjunctival diphtheria.

Loretin-Bismuth is employed in powder, and in the form of a ten-per-cent. ointment or paste, as an application to ulcers, syphilitic lesions, and moist eczema. It has also been given internally for intestinal tuberculosis in dose of 0.5 gm. (gr. viij.). *W. A. Bastedo.*

LOS ANGELES AND PASADENA.—Los Angeles is the largest city in Southern California, containing over 100,000 inhabitants, and is the great business centre of this region. It has grown with great rapidity since 1880, when it had only about 11,000 inhabitants. It lies in a valley upon the western bank of a small river, 17 miles from the Pacific coast. To the northwest is Santa Barbara, 80 miles distant; to the south, San Diego, 125 miles distant; and 350 miles northwest is San Francisco. Many railroads converge here, and it is within easy access of attractive resorts in the mountains, valleys, and on the seacoast. Los Angeles and its suburbs, of which Pasadena is one, possess all the attributes and charm of a town situated in such a climate as Southern California—a luxuriant and varied vegetation, flourishing to a greater or less extent the year through, mild winters with a long duration of daily sunshine, comparatively cool summers, a great preponderance of cloudless weather, and a low rainfall.

The city itself contains many fine buildings, public and private; boulevards shaded by many varieties of tropical and semi-tropical trees, numerous parks, ninety miles of street railway, and a sewer system emptying into the Pacific Ocean. "It is a beautiful and interesting place, full of architectural and social contrasts. Several elements go to make up the city, the Southern or Spanish, and the American; and brown faces, betraying Castilian and Indian ancestry, mingle on the busy streets with those of the fairer-skinned Yankee type. Low adobe quarters and American country houses are found near each other, within a few minutes' walk, although the old-fashioned 'adobe' is growing more rare. Modern office-buildings appear within sound of the bells of the early missions" (Solly). The water-supply comes from the neighboring mountains and is abundant and good. The watering-places of Long Beach, Santa Monica, San Pedro, and Redondo are within easy access of Los Angeles.

The climate of Southern California as a whole has been already discussed in this HANDBOOK under the title *California, Southern*, and the reader is referred to that article.

CLIMATE OF LOS ANGELES, CAL. LATITUDE, 34° 3′; LONGITUDE, 118° 15′.

	Spring.	Summer.	Autumn.	Winter.	Year.
Temperature—					
Average mean	58.4°	67.5°	62.7°	53.5°	60.5°
Average daily range	20.6	23.1	24.5	20.1	22.0
Mean of warmest	69.4	81.3	76.1	64.2	72.7
Mean of coldest	48.8	58.2	51.6	44.1	50.7
Highest or maximum	97.6	100.4	95.3	85.4	94.7
Lowest or minimum	37.9	49.4	40.2	29.3	39.2
Humidity—					
Mean relative	70.4%	69.1%	63.2%	63.6%	66.6%
Precipitation—					
Average in inches	4.28	.02	1.57	8.65	14.52
Wind—					
Prevailing direction	W.	W.	W.	N.E.	W.
Average hourly velocity in miles	5.3	4.8	4.8	5.4	5.1
Weather—					
Average number of clear days	36.2	34.9	52.3	47.9	171.3
Average number of fair days	38.1	50.6	32.5	26.6	144.8
Average number of clear and fair days	71.3	85.5	84.8	74.5	316.1

The preceding table, in connection with what is given in the article referred to, will be sufficient to indicate the principal climatic features of Los Angeles.

"In Pasadena," says Dr. McBride, "the temperature falls steadily from the warmest period, usually 1 P.M., until sunrise next morning. The temperature and humidity, referred to in the following table, were always taken on a northeast porch."

The general characteristics of the climate are those of all this region—one resort differing from another only by the modifications of its situation; warmth, equability, a large amount of sunshine, and a small amount of annual rainfall are the main features. The temperature is somewhat higher in summer and lower in winter than it is at the resorts on the coast. There are frequent fogs in the morning and at night during the spring and summer. The average number of days with foggy nights and mornings for the year is fifty-seven. The highest recorded temperature is 108° F., and lowest 28° F. The humidity is very moderate, 66.6 per cent. for the year. A large number of tourists visit Los Angeles during the year, many of them in search of health; but for the consumptive a large city, however favorable the climate may be, is obviously not the most desirable place. The best season for visiting Los Angeles is said to be from November to May.

Pasadena, a suburb of Los Angeles, is situated in the beautiful San Gabriel Valley, about nine miles distant, at an elevation of nine hundred feet. It is an attractive residential city of about twelve thousand inhabitants. It is twenty miles from the sea and five from the mountains. The soil is sandy and porous, and there is a good supply of water. The climate is essentially the same as that of Los Angeles, though the temperature is a little higher, and the humidity somewhat lower. The mean average temperature for January is 54° F.; for December 58° F. The winter is said to be especially agreeable. From the beauty of its location, the attractiveness of the surrounding country, its social and educational advantages, the excellence of its architecture, its orange groves and vineyards, it is considered one of the most eligible places of residence in Southern California. The accommodations are abundant and good.

Date—1900.	Temperature, Degrees Fahr. At sunrise.	Temperature, Degrees Fahr. At 1 P.M.	Weather.	Midday humidity. Per cent.
Jan. 1st	51	64	Clear A.M., partly cloudy P.M.	71
2d	54	60	Cloudy; sprinkles	73
3d	55	57	Rain from 6 A.M. all day, 1.09 inch.	
4th	52	64	Fine; some clouds P.M.	73
5th	57	64	Cloudy and sprinkles A.M.; 0.02 inch.	73
6th	50	66	Fine; clouds P.M.	73
7th	53	64	Partly cloudy	73
8th	52	64	Fine; high wind P.M.	42
9th	51	64	Fine	45
10th	50	66	Fine	42
11th	49	67	Fine	45
12th	53	70	Fine	45
13th	56	71	Fine	
14th	52	66	Fine	42
15th	50	62	Fine	45
16th	47	57	Fine	46
17th	55	72	Fine	45
18th	55	72	Fine	40
19th	57	71	Fine	36
20th	52	67	Fine	43
21st	47	64	Fine	50
22d	49	67	Fine	43
23d	52	68	Cloudy	44
24th	53	66	Cloudy	68
25th	55	61	Cloudy; sprinkles	63
26th	50	64	Clear	73
27th	49	61	Partly cloudy	81
28th	54	60	Partly cloudy	76
29th	51	67	Partly cloudy A.M.	83
30th	55	62	Partly cloudy A.M.	76
31st	51	63	Partly cloudy A.M.	73
Feb. 1st	47	67	Partly cloudy A.M.	76
2d	51	63	Partly cloudy A.M.	73
3d	47	65	Fair	67
4th	50	58	Partly cloudy and squalls	67

Date—1900.	Temperature, Degrees Fahr. At sunrise.	Temperature, Degrees Fahr. At 1 P.M.	Weather.	Midday humidity. Per cent.
Feb. 5th	48	59	Cloudy	75
6th	46	67	Fine	50
7th	50	64	Fine	44
8th	48	64	Fine	44
9th	48	66	Fine	38
10th	55	67	Fine	31
11th	53	68	Fine	41
12th	48	64	Partly cloudy	66
13th	56	64	Partly cloudy	66
14th	50	60	Partly cloudy	67
15th	52	62	Partly cloudy	67
16th	49	68	Clear	58
17th	58	75	Clear	43
18th	57	70	Clear	44
19th	49	64	Fine	50
20th	51	65	Fine	60
21st	52	74	Fine	48
22d	56	78	(55° wet, 76° dry) =	22
23d	59	76	Fine	22
24th	57	75	Fine	22
25th	55	73	Fine	60
26th	50	65	Fog early	58
27th	52	71	Clear	33
28th	54	74	Clear	26
Mar. 1st	57	73	Clear	33
2d	53	68	Clear	44
3d	55	61	Misty all A.M.; 0.045 inch	74
4th	51	56	Rain 7 to 1; 7.53 inches	
5th	45	60	Fine	66
6th	46	62	Fine	66
7th	48	65	Fine	66
8th	51	66	Fine	44
9th	56	79	Fine	36
10th	65	83	Fine	32
11th	68	81	Cloudy	38
12th	56	70	Cloudy	76
13th	59	63	Cloudy	76
14th	57	64	Cloudy	77
15th	56	72	Cloudy	76
16th	57	64	Misty; 0.06 inch	88
17th	57	63	Partly cloudy	66
18th	56	69	Cloudy	66
19th	56	62	Misty; 0.10 inch	78
20th	55	69	Cloudy	68
21st	55	68	Cloudy	66
22d	57	63	Misty; 0.02 inch	82
23d	56	63	Misty; 0.02 inch	78
24th	51	71	Fine	66
25th	54	72	Fine	64
26th	58	68	Partly cloudy	63
27th	55	67	Clear	54
28th	51	70	Clear	54
29th	53	75	Clear	51
30th	57	79	Clear	53
31st	57	78	Clear	60
July 1st	63	72	Fog early	65
2d	60	73	Fog early	61
3d	58	73	Slight high fog	61
4th	57	75	Clear, slight high fog	62
5th	62	78	Clear, slight high fog	62
6th	62	78	Clear, slight high fog	62
7th	64	79	Clear, slight high fog	62
8th	61	82	Clear; fog	60
9th	63	82	Fog; fine	61
10th	65	84	Fog early	56
11th	65	87	Clear	44
12th	69	88	Clear	46
13th	70	86	Fog early; fine	51
14th	67	78	Fog early; fine	57
15th	66	78	Fog	58
16th	66	80	Fog	56
17th	62	79	Fog	58
18th	60	78	Fog	58
19th	61	78	"Eastern atmosphere," evening lightning.	60
20th	65	74	Sprinkles during day	69
21st	63	81	Shower clouds	68
22d	69	89	Fire on mountains broke out; clear.	34
23d	77	92	Clear	29
24th	71	91	Clear	35
25th	66	85	Clear	45
26th	63	81	Clear	50
27th	65	78	Slight fog	54
28th	67	80	Fog slight	62
29th	64	77	Fog	62
30th	62	78	Fog early	62
31st	64	85	Clear	50
Nov. 1st	59	75	Fine	35
2d	61	82	Fine	26
3d	65	86	Fine	19
4th	65	84	Fine	36
5th	65	84	Fine	32
6th	67	83	Fine	32
7th	64	76	Fine	32
Nov. 8th	57	73	Fine	40
9th	62	79	Fine	35
10th	63	82	Fine	27
11th	63	83	Fine	27.5
12th	64	84	Fine	24
13th	64	82	Fine	26
14th	60	75	Fine	28
15th	60	71	Cloudy	75
16th	57	64	Showery 11 A.M.	78
17th	57	59	Rained 0.86 7 A.M., rained all day.	
18th	58	62	Rained 1.11 inch; cloudy and sprinkly.	
19th	57	63	Partly cleared off; 0.06 inch.	
20th	54	58	Showery last night and all day; 0.62 inch.	
21st	56	58	Rained all day; 3 P.M. 1.41 inch., 6:15 P.M. 3.24 inches.	
22d	58	67	Cleared off; 2.02 in.; fog 4 P.M.	
23d	57	66	Fine	56
24th	56	72	Fine	49
25th	60	73	Fine	54
26th	59	70	Fine	60
27th	57	72	Fine	59
28th	55	70	Fine	44
29th	53	71	Fine	40
30th	57	72	Fine	42
Dec. 1st	60	75	Fine	39
2d	60	72	Fine	38
3d	59	73	Fine	
4th	59	75	Fine	40
5th	61	76	Fine	38
6th	61	75	Fine	38
7th	62	76	Fine	40
8th	60	74	Fine	48
9th	58	71	Fine	45
10th	53	63	Fine	58
11th	50	64	Fine	58
12th	51	68	Fine	58
13th	52	67	Fine	51
14th	52	62	Partly cloudy all day	48
15th	50	64	Fine	46
16th	50	68	Fine	44
17th	54	66	Fine	44
18th	53	70	Fine	40
19th	59	72	Fine	36
20th	56	77	Fine	44
21st	53	64	Partly cloudy	44
22d	54	66	Fine	77
23d	51	68	Fine	41
24th	52	69	Fine	41
25th	54	71	Fine	41
26th	55	67	Fine	51
27th	48	64	Fine; dust storm 4:30 P.M.; clouds came from S. Bernardino region, east.	58
28th	51	62	Dust obscures the sun; no wind	34
29th	49	63	Clear	37
30th	45	60	Clear	39
31st	44	57	Clear	30

The preceding table, in which are given the daily temperature, humidity, and weather of Pasadena for the winter months and the month of July of the year 1900, has been kindly furnished the writer by Dr. J. H. McBride of that place; and as it shows, so much better than any compiled and abbreviated report can do, the weather conditions for each day during this period, at this locality—which may serve as a type for other similar localities in Southern California—it is given in full.

"The year 1900 was very dry; only about eight inches of rain (I think). The usual rainfall is sixteen. In the winter of 1900–1901 we had twenty-three inches."

Sierra Madre, 1,700 feet above sea level, twelve miles northeast of Los Angeles, at the base of the foothills, has a climate considered particularly healthful, and was the location selected by the State Board of Health in 1880 as the one most favorable for consumptives in Southern California.

There are various other places in the sheltered San Gabriel Valley favorable for invalids suffering from tuberculous, renal, or cardiac affections. Such are San Gabriel, Monrovia, Duarte, and others.

Echo Mountain, 3,500 feet high; Mount Lowe, 5,650 feet; Mount Wilson, 5,400 feet, all easily reached from

Los Angeles or Pasadena, command wide and extensive views. Hotels are found on the summits of these mountains, and the climate, besides possessing the characteristics of that of Southern California, has also the peculiarities of altitude. *Edward O. Otis.*

LOSOPHAN.—(Tri-iodo-meta-cresylic acid.) An antiseptic preparation, obtained by the action of iodine upon oxytoluic acid in the presence of an alkali. Its formula is $C_6HI_3OHCH_3$, and it is said to contain eighty per cent. of iodine. It forms in white needles, insoluble in water, slightly soluble in alcohol, and readily soluble in ether, benzene, and chloroform. At 140° F. it is freely soluble in fatty oils.

It is particularly recommended in parasitic skin affections. It may be used in tinea tonsurans, scabies, pityriasis versicolor, also in prurigo, in chronic eczema, acne, and sycosis. It is contraindicated in all acute inflammatory conditions of the skin, as it is liable to increase the irritation and intensify the disease. The remedy may be applied in a solution of the strength of one per cent., or in an ointment of one to three per cent.

Beaumont Small.

LOUISVILLE ARTESIAN WELL.—Jefferson County, Kentucky.

Location.—On the corner of Tenth and Rowan streets, Louisville.

This well is 2,086 feet deep by 3¾ feet in diameter, and occupied sixteen months in boring. The temperature of the water, as it issues from the orifice of the well, is 76.5° F. A self-registering thermometer sunk to the bottom of the well indicated 86.5° F. The point of constant temperature immediately beneath the surface at Louisville is 53° F. This result shows an increase of temperature of one degree for every sixty-seven feet until the bottom is reached. The following analysis was made by Dr. J. Lawrence Smith:

ONE UNITED STATES GALLON CONTAINS:

Solids.	Grains.
Sodium chloride	621.52
Calcium chloride	65.72
Magnesium chloride	14.17
Potassium chloride	4.22
Aluminum chloride	1.21
Lithium chloride	.10
Sodium sulphate	72.29
Calcium sulphate	29.43
Magnesium sulphate	77.33
Aluminum sulphate	1.80
Potassium sulphate	3.22
Sodium bicarbonate	2.72
Calcium bicarbonate	5.99
Magnesium bicarbonate	2.75
Iron bicarbonate	.35
Sodium phosphate	1.54
Magnesium iodide	.35
Magnesium bromide	.46
Silica	.88
Organic matter	.70
Loss in analysis	8.12
Total	915.47

Gases.	Cu. in.
Sulphureted hydrogen	2.00
Carbonic acid	6.17
Nitrogen	1.36

The water is quite similar to that of the Kissingen Springs in Bavaria, and to the Kentucky Blue Lick Springs. It has been found very beneficial in cases of dyspepsia and constipation and in functional liver complaints. *James K. Crook.*

LOUISVILLE MINERAL SPRINGS.—Pottawatomie County, Kan.

Post-Office.—Louisville.

Accommodations in two hotels and in private families.

Access.—Viâ Union Pacific Railroad to Wamego, thence three miles to spring by stage.

This resort has recently attracted much attention in Kansas. The springs are charmingly located in a natural blue-grass park of ten acres, which has been greatly improved. It is said to be one of the finest camping places in Kansas. The surrounding country is hilly and the location of the springs is about 900 feet above the sea level. The temperature ranges from 10° F. in winter to 100° F. in summer, these figures representing the extremes. The springs are two in number, and afford an abundance of pure, crystal water, having a temperature of 60° F. A qualitative analysis, made in 1885, showed the presence of iron, sulphur, soda, magnesia, and carbonic-acid gas. The waters have been found of great efficacy in constipation, dyspepsia, general debility, and liver and kidney affections. *James K. Crook.*

LOVAGE ROOT.—Levisticum. The root of *Levisticum Levisticum* (L.) Lyons. This is a large, aromatic, yellow-flowered perennial herb, with a short, thick, fleshy rootstock, from which several large, simple roots are given off below, and three or four stout, upright, slightly branching stems above. All parts of the plant have a strong and rather agreeable fragrance, due to its peculiar essential oil, and the root contains also considerable resin. When fresh, the stem and leaves exude a yellowish latex upon being broken.

Lovage is said to be truly wild only in Southeastern Europe (Bosnia and Servia, Flückiger), but it has been cultivated for centuries in other parts of Europe, and is extensively naturalized. That of commerce comes principally from Holland, Germany, and France. It is at present cultivated upon a small scale in the United States. The "root" is most in demand, although the fruit has more oil. It consists of the rhizome split or quartered, and, more abundantly, of the roots themselves, either whole or split. The pieces are of a brown, gray-brown, or black color externally, transversely marked near the top, elsewhere deeply longitudinally wrinkled and shrivelled; section white, yellow, or reddish; resin canals visible; texture spongy and flexible. Odor and taste peculiar, aromatic, resinous, bitterish-sweet, angelica-like. It is very prone to being worm-eaten, and an article entirely free from this defect is difficult to obtain. *Essential oil, resin* (yielding umbelliferon), *malic* and *angelic acids, gum* and *sugar* are among its constituents; to the first two it owes its medicinal value, whatever that may be.

It is a rather pleasant stimulant, aromatic, and diuretic, of the angelica and musk-root kind, with no active properties. It is sometimes given as a diuretic in dropsies from heart disease, etc., also for catarrh of the bladder, and for chronic bronchitis. It is, however, little used in this country, and even abroad has degenerated mostly to the level of a household herb among the country people.

Oil of lovage is an article of commerce, existing in three forms—from the root, from the fruit, and from the fresh herb. Although differing in specific gravity and slightly in flavor, they are very similar. *W. P. Bolles.*

LOWER BLUE LICK SPRINGS.—Nicholas County, Kentucky.

Access.—Viâ Kentucky Central Railroad to Carlisle, thence nine miles by stage to springs.

We have not been able to obtain any recent information in regard to the condition of this resort. The following analysis of the main spring was made by Dr. Robert Peter, the State geologist, a number of years ago:

ONE UNITED STATES GALLON CONTAINS:

Solids.	Grains.
Magnesium carbonate	1.36
Calcium carbonate	23.65
Potassium chloride	1.39
Sodium chloride	512.85
Magnesium chloride	32.39
Potassium sulphate	8.93
Calcium sulphate	33.99
Magnesium iodide	.05
Magnesium bromide	.24
Alumina, lime, phosphate, iron oxide	.36
Silicic acid	1.10
Loss	17.72
Total	634.03

Gases.	Cu. in.
Carbonic acid gas	98.80
Sulphureted hydrogen	18.24

According to Walton these are exceptionally fine waters of the saline-sulphureted class, valuable in engorgements of the liver and abdominal viscera and diseases arising therefrom. They may be relied on in gastric catarrh, and in the form of warm baths they prove efficacious in diseases of the skin. Besides the main spring there are others on the opposite side of the Licking River and in its bed, which have been found on examination to be of a similar character. *James K. Crook.*

LUMBAGO.—See *Neuralgia*.

LUMBAR PUNCTURE.—See *Brain: Cerebro-Spinal Fluid*, and *Labor, Normal*.

LUNGS, ANATOMY OF THE.—Since the first edition of this Handbook was issued many advances have been made in our knowledge of the anatomy of the lung. At the present time it seems to be one of the organs to which renewed attention has been directed.

In the present article questions bearing on the comparative anatomy of the lung have been omitted, and the reader is referred to the first edition of this Handbook, Vol. IX., and to a paper, by the author of this article, in Vol. VIII. of the *Journal of Morphology*, for a discussion of this part of the subject.

Historical.—The first account we find of the structure of the lungs is the very incomplete one given by Hippocrates.[31] He compares them to a sponge interspaced with numerous small vessels. Aristotle[5] also gave to the lungs a spongy nature; the canals receiving blood from the so-called great vein. Celsus[15] also describes the lungs as being spongy. Galen[22] had only a little better idea of their structure; he describes them as being made up of lobes, liver-like in substance, and containing many vessels. Vesalius[68] describes the lungs as being divided into lobes, and says in regard to their structure that "the substance of the lung is soft, spongy, thin, light, airy flesh, as if formed of frothy blood, or bloody froth, and crowded with many branches of vessels."

We now come to the time when Harvey[25] announced his discovery of the circulation of the blood; this had its effect on all anatomical research. Malpighi,[46] profiting by this discovery, proved by means of injections that the air and blood were not contained in the same channels, but had separate systems of vessels, and that these did not communicate with each other, but did communicate among themselves. He also saw the circulation of the blood in the vessels of the lung of a living frog. He recognized the presence of air vesicles, and described them as opening into the trachea and communicating with one another. He also compares the lung to a sponge. Bartholin[7] defended the views of Malpighi. The next writer of note is Willis.[71] He is wrongly quoted by Williams,[70] who placed Willis among those who describe the air vesicles as communicating with one another. What he does say, directly opposite to the views of Malpighi, is that the bronchial tubes give off numerous small branches which bear on their distal extremity little bladders, thus giving the lung the appearance of a bunch of grapes. Helvetius[28] returned to the older idea and maintained that the lung was spongy in its nature. He denied that the spongy tissue of the lung was formed by the expansion of the bronchial tube, but asserted that the bronchus simply penetrated into the spongy tissue. His description is not very clear. Soemmering[66] describes the lungs as made up of small, irregular, polygonal cells grouped together into lobules. The individual cells of the lobule communicate, one with another, but those of one lobule do not communicate with those of adjoining lobules.

Early in the present century, Reisseisen[55] published a very important brochure in which he advanced views quite opposite to those accepted by the anatomists of his day. His method consisted in pouring mercury into a bronchus and, by applying gentle pressure, forcing it on until it appeared beneath the pleura. He describes the bronchi as dividing into branches which in turn divide quite rapidly, becoming at the same time much smaller, until eventually each small branch ends in a single rounded extremity. This was apparently a revival of the theory of Willis. Magendie[44] wrote two important papers on the lungs. In the first he denies that the bronchi terminate in air vesicles, but affirms that the air-cells of one lobule communicate with one another, but do not communicate with those of adjoining lobules. In his second paper he states that those grape-like structures described as hanging on to the end of a bronchus do not exist in nature, but are to be found only in books. His conclusion is that the lung is made up of "spongy tissue formed by the arrangement of the vessels, which have between them small spaces into which the air penetrates freely."

In 1832 Bazin[8] wrote supporting the views of Reisseisen, and was followed a few years later by Lereboullet,[42] who, in quite a lengthy essay, also supported Reisseisen. Addison[1] failed to find "any tubes ending in culs-de-sac; on the contrary, I always saw air-cells communicating with one another in every section I made." He describes the bronchi as dividing, within the lobule, into numerous minute branches which terminate in "branched air-passages and freely communicating air-cells. Huschke,[34] however, writing about the same time, described the bronchi as ending in fine branches, which bore on their free extremity small sacs which did not communicate with one another.

Rainey[54] wrote several excellent memoirs on the lung. He says "they are made up of bronchial tubes, bronchial intercellular passages, and air-cells." These air-cells communicated with one another and with the bronchi or bronchial intercellular passages, by means of large circular openings. Moleschott[51] published an excellent brochure in which he combats strongly the opinion of those who hold to the communication of one vesicle with another. In no instance did he find the bronchi forming anastomoses; he also distinctly states that the air-vesicle contains no opening except that by which it communicates with its proper bronchial tube.

Rossignol[60] gave us a very valuable treatise on the structure of the lungs. He introduced the term "infundibulum." According to this author the bronchi give off numerous branches, which cross each other repeatedly in all directions, but do not communicate; from the ultimate division of the bronchial tube arises a dilatation in the form of a funnel, which he terms "infundibulum." The walls of each infundibulum are lined with numerous air-cells or alveoli. Rossignol compares each infundibulum with its alveoli to the lung of the Batrachians, and says: "The lung looked at from this point of view can be defined as the assemblage or concentration of innumerable small lungs, held together by means of a common bronchial tree." In an inaugural dissertation written by Adriani,[2] he adopts the nomenclature of Rossignol. He also describes alveoli as existing on the walls of the bronchial tubes just before they dilate into infundibula. He takes strong exception to Rossignol's statement that there are no communications between adjoining alveoli, declaring it to be without doubt false, and describes minute openings by which adjoining alveoli communicate.

Kölliker[39] gives quite a valuable description of the finer structure of the air-passages. He considers the term "infundibulum" introduced by Rossignol unnecessary, and says that "all the vesicles belonging to one lobule open, not into ramifications of the finest bronchial twig going to it, but into a common space from which the air-vessel is afterward developed."

The "Cyclopædia of Anatomy and Physiology"[70] contains an article on "Respiration" by Williams, in which he has embodied some of his personal investigations. He describes each lobule as being sacculated and receiving a single bronchial tube; this tube gives rise within the lobule to small branches which subdivide to the third or fourth order, and from these latter branches the air-cells arise. He discards the term "infundibulum," and uses in its place that introduced by Rainey, "intercellular passage." Mandl[47] describes the bronchial tubes as ending in terminal cavities which have numerous depressions