suffered from gout in the feet for about four years. In that year he took for four weeks the strongest sulphur water and baths. The following season (1886) he returned, having had two very slight attacks of gout during the spring. The general condition was, however, changed for the worse. He was anæmic and languid; the urine was very albuminous, although the skin still acted freely. After a few days of sulphur treatment the chalybeate was resorted to with benefit. The next year (1887) he reported himself as moderately well, but he had had several gouty attacks in the feet and knees. One of these had been "brought on by a course of steel." The effervescing chalybeate was taken for three weeks, and he left the spa without gouty symptoms, and much better in every respect, and able to walk several miles at a stretch. The urine remained faintly albuminous.

It is thus evident that a sparkling iron water of moderate strength (a third of a grain to the pint) may be useful in gouty cases; or, rather, it may be proper to disregard the gout and treat in this manner the more serious maladies to which it has given rise. But whether gouty or otherwise, a condition exists of premature senility of the tissues, with anæmia (perhaps hydræmia), and often with signs of renal failure, in which carbonate of iron, freely diluted, is beneficial. And thus if Leamington, with its saline chalybeate, is excellent in the anæmia of the young, so no less Strathpeffer, with its effervescing carbonated chalybeate, may be regarded as congenial to the anæmia with debility of the aged.

Group II.—Dyspepsia in middle life, due to nervous prostration or overwork.

CASE IV.—A lady of nearly 60, after severe domestic trial, began to complain of "rheumatic" pains, indigestion, and loss of strength and colour. She was recommended spinal douches and the chalybeate water, taken hot at noon. The quantity was soon increased to about forty ounces daily, divided into small doses. After a fortnight she left the spa, not without much improvement in health. In this class of cases the peculiarly stimulating effect of effervescing waters is often noticed, exhilaration and even giddiness following their use by delicate stomachs.

Group III.—Chronic malarial affections.

CASE V.—A lady, aged about 45, after much mental strain and bodily illness (dysentery and "fevers") in tropical South America, returned home in ailing health, subject to recurring "internal chills," diarrhoea, and general weakness. She was stout, very anæmic, nervous, with frequent indigestion, headaches, and flying pains. For nearly four weeks this lady took the chalybeate, usually hot, and latterly to the extent of forty-five ounces daily. With this were combined occasional douches, sulphur baths, and massage, which no doubt contributed to a striking improvement in nervous, muscular, and digestive tone. For cases of this kind a very prolonged use of the water is to be recommended, repeated from year to year, where benefit has been once derived.

The pure or carbonated chalybeates, more especially those of a light and digestible quality, will probably be accorded a wider therapeutic range when they have been systematically put to the test. That the iron is actually absorbed would seem to be certain not only from the fact that the evacuations are hardly ever discoloured, but also from the rapid and obvious tonic effects in many instances.

FACTS AND FIGURES IN CONNECTION WITH THE CLIMATE OF CALIFORNIA.

By JAMES H. PARKINSON, L.R.C.S.I.,
Sacramento, California.

IN beauty and grandeur of scenery California is unsurpassed, and there is good railroad communication throughout the State; the hotel accommodation is quite equal to that which people who travel are wont to find away from home. Those who wish to reside permanently will find many places which will perfectly meet the needs of everyday life.

There is, perhaps, no other region where one can travel for hundreds of miles in so equable a climate as that of the Sacramento and San Joaquin valleys. From Red Bluff in the north to Sumner in the south is 400 miles, and throughout that expanse of country what is true of one portion holds good for all. Northward and southward the surface is more broken, and the climate of different localities varies with the situation.

In order that some idea may be obtained of the relative position

of stations in the following tables, I append the latitude, longitude, and height above sea-level of seven towns in the State.¹

TABLE I.

Stations.	Latitude.	Longitude.	Above Sea-level.
Los Angeles	34° 04' N.	118° 14' W.	334 feet
Oakland	37° 48' N.	122° 17' W.	25 "
Red Bluff	40° 11' N.	122° 15' W.	307 "
Sacramento	38° 35' N.	121° 30' W.	35 "
San Francisco	37° 48' N.	122° 25' W.	60 "
Santa Barbara	34° 25' N.	119° 42' W.	30 "
San Diego	32° 44' N.	117° 10' W.	40 "

The comparative temperatures are well shown in the following table. Those for Europe are taken from Dr. J. H. Bennet's work, *Winter and Spring on the Shores of the Mediterranean*. The temperatures for California are from the Signal Service records and some independent observers, and represent an average of from seven to ten years.

TABLE II.

	Average winter Temp.	Average spring Temp.	Average summer Temp.	Average fall Temp.	Average annual Temp.	Highest Temp.	Lowest Temp.	Above Sea-level.
	°	°	°	°	°	°	°	Feet.
Florence	44.3	56.0	74.0	60.7	58.8	*	*	—
Mentone	49.0	58.3	73.9	62.5	60.9	85	23	—
San Remo	48.9	57.3	72.4	61.9	60.1	85	25	—
Nice	47.8	56.2	72.3	61.6	59.5	*	*	—
Cannes	49.6	57.4	73.0	61.0	60.2	85	20	—
San Diego	54.6	58.1	66.8	62.6	60.5	101	32	40
Los Angeles	53.6	58.4	67.8	62.7	60.6	112	28	334
Santa Barbara	54.3	59.4	67.7	63.1	61.0	102	31	30
Santa Cruz	51.8	57.7	62.2	59.6	57.8	98	30	25
Monterey	50.9	56.7	61.6	57.1	56.6	90	25	42
San Francisco	51.3	54.6	58.5	58.2	55.7	95	33	60
Sacramento	48.3	59.5	71.7	61.5	60.2	106	19	35
Oroville	52.9	64.5	78.8	64.3	65.1	102	29	205
Red Bluff	46.8	59.8	79.7	63.2	62.4	110	19	307
Auburn	46.2	56.4	74.3	61.7	59.7	106	18	1,363

* No Record.

It will be seen that the average winter temperatures, except that of Sacramento, are much higher in California. The spring temperatures are about the same in both places. In the summer temperatures California is several degrees cooler, while again in the autumn the temperatures equalise.

In connection with the highest temperature columns it may be stated generally that such elevations are exceptional. High temperatures in California are not oppressive. During the summer months, when harvesting is in active progress, men and animals work throughout the long days under the cloudless skies, with the thermometer at 110° or 120° (in the sun), yet sunstroke is almost unknown. I do not think that this peculiarity has been satisfactorily explained. Many ascribe it to the dryness of the atmosphere, and there would seem to be a foundation for this belief in the history of cases which have occurred in Sacramento.

For the invalid or convalescent a fact of great importance is the universal prevalence of cool nights. During the afternoon the south breeze commences to blow, and very soon the air is pleasantly cool. This breeze arrives at different hours, according to locality: in the coast towns, early in the afternoon; at Los Angeles, about 3 P.M.; at Sacramento, usually about 5 P.M., and continues to blow during the night. It is but rarely, in an ordinary well-ventilated room, that bedclothes can be dispensed with; in fact, during a constant residence of almost five years in this city I can remember just four occasions that I slept without cover.

Table No. III gives some idea of the number of fine days which can be relied on. The figures indicating the days on which rain fell for five of the stations were not at hand. Clear, fair, and cloudy days are estimated on the Signal Service basis, a clear day being one on which cloudiness is three or less in a scale of 10. Sacramento, with 240 clear days, leads every town in the United States at which an observer for the Signal Corps is stationed. I regret that the number of days on which rain fell is not given for all stations, as this is a matter of considerable importance for the invalid.

¹ I am indebted to Sergeant James A. Barwick, the Signal Corps observer at Sacramento, for compiling the tables contained in this article.

TABLE III.

Stations.	Average Annual Number of Days Rain Fell.	Average Seasonal Rainfall.	Average Annual Number of Clear Days.	Average Annual Number of Fair Days.	Average Annual Number of Cloudy Days.
Los Angeles	—	Inches. 17.68	171.3	142.4	51.6
Oakland	68.0	24.54	263.9*	—	101.4
Red Bluff	—	27.46	227.7	81.7	55.3
Sacramento	69.6	19.94	240.0	74.9	50.4
San Francisco	—	24.25	146.7	139.0	79.6
Santa Barbara	—	16.92	No record	No record	No record
San Diego	—	11.01	122.3	157.6	85.4

* Clear and fair days combined; they are not recorded separately.

The following table is self explanatory:

TABLE IV.—Average Direction from which the prevailing Winds have been observed to blow. The Averages are from 7 to 15 Years; those in San Diego and San Francisco are Averages from 1871 to 1884, while Los Angeles, Sacramento, and Red Bluff are from 1877 to 1884.

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
San Diego	NE	NW	W	W	W	W	W	W	NW	NW	NW	NE
Los Angeles	NE	NE	W	W	W	W	W	W	W	W	NE	NE
San Francisco	N	W	W	W	W	SW	SW	SW	SW	SW	NW	N
Sacramento	SE	SE	S	S	SW	S	S	S	S	S	SE	N
Red Bluff	N	N	S	S	S	S	S	S	S	S	SE	N
Cape Mendocino	NW	NW	SE	NW	NW	NW	NW	N	N	N	SE	NW

The velocity of the wind is not given, but I may say that in the interior of the State what sailors call a "moderate gale" is practically unknown. I have but seldom seen even a "stiff breeze" in the capital city.

These facts and figures are submitted without extended comment. We who live in the Far West are, perhaps, too apt to boast of our "glorious climate," but those only who have existed for years in less hospitable regions can appreciate what it truly is. For persons of comfortable or ample means California is easy of access, and can be reached in eighteen days from any point of departure in the United Kingdom. The journey can be made in comfort and even luxury. By the Royal Mail and Pacific Mail the trip can be made almost wholly by sea, and for good sailors it is the easiest way to travel.

A CASE OF OSTEO-PLASTIC RESECTION OF THE FOOT BY THE METHOD OF MICKULICZ.

By SIR WILLIAM MACCORMAC, F.R.C.S.

Surgeon, St. Thomas's Hospital.

THE lad whose case I wish to bring before the Society this evening is now 16 years old. On March 12th, 1887, I performed the operation introduced by Mickulicz, of Prague, and Wladimiroff, of Kasan. So far as I know it has not been previously performed in England, and as now more than a year has elapsed since the date of the operation, the Fellows of the Society will be able to estimate the amount of usefulness attained in the limb. The notes were taken by Mr. C. H. James, dresser of the case.

W. B., aged 15, a clerk, much emaciated, with a pasty face and dull, suffering expression, was admitted to St. Thomas's Hospital January 29th, 1887. There is no history of phthisis, and both parents are alive and well. Six months before the boy fell downstairs and sprained his left ankle. He was treated as an out-patient with strapping and plaster-of-Paris splints without improvement. One abscess had formed behind the inner malleolus, which was opened, and another in the sole of the foot. The swelling was very prominent on each side of the tendo Achillis. The sinuses led down to diseased bone, and it was evident the

joint between the astragalus and os calcis was extensively diseased. Two further abscesses presently formed, and the general condition of the patient became much worse. There was now evidence that disease was beginning in the ankle-joint. The parents very reluctantly consented to an operation, stipulating, however, that the foot must not be amputated. The soft parts covering the heel were much infiltrated and riddled with sinuses, but considering the disease to be limited to the os calcis and astragalus, and involving secondarily the joints adjacent, Sir William decided to perform the following operation.

The patient was placed in the prone position. If it be the right foot, the knife is introduced on the inner border of the foot just in front of the scaphoid tubercle, and a transverse incision extending to the bone is made across the sole of the foot to a point a little behind the tuberosity of the fifth metatarsal bone. On the left foot the direction of this incision will, of course, be reversed.

From the inner and outer extremities of the wound incisions are prolonged upwards and backwards over the corresponding malleolus and their extremities (Fig. 1), united by a transverse cut

Fig. 1.—Direction of the incisions: Mickulicz's operation.

across the back of the leg, made down to the bone, at the level at which it is to be sawn, usually immediately above the joint surface of the tibia. In cases where a larger removal of the tibia and fibula is required, the lateral incisions must be more oblique, and the posterior transverse cut made at a higher level.

The ankle-joint is now opened from behind, the disarticulation completed, and, after flexing the foot, the soft parts are carefully separated in front until the medio-tarsal joint is reached, where disarticulation is effected, as in Chopart's operation. The heel portion of the foot—consisting of the astragalus, os calcis, and the soft parts covering them—is thus removed. The articular surfaces of the tibia and fibula, with the malleoli, are now sawn off, as well as those of the cuboid and scaphoid bones (Fig. 2). The

Fig. 2.—Line of section of the bones.