side, in 3 from both father and mother and in 12 cases from the brothers and sisters. In 28 cases the heredity taint came from the mother herself as follows: insane, 5; epileptic, 13; migraine, 5; hysteria, 2; neurotic, 3. In 12 the heredity was from the father directly as follows: insane, 3; epileptic, 3; migraine, 3; neurotic, 2; general paresis, 1; chorea, 1. The three cases from both sides were as follows: first case, father migraine, mother migraine; second case, father insane, mother insane; third case, father migraine, mother migraine. In the remainder of the female cases the heredity was from the collateral branches as in the males. The age at onset of epilepsy in the females was as follows: 40 under ten years, 31 between ten and twenty years, 10 between twenty and thirty years, 4 between thirty and forty years.

The percentage with hereditary history given by different authors is as follows: Echeverria, 306 cases, 25%; R. Reynolds, 38 cases, 31%; Moreau, 364 cases, 32%; Aronsohn, 508 cases, 32%; O. Berger, 71 cases, 32.3%; Binswanger, 150 cases, 36.3%; Gowers, 2,400, 40%; Spratling, 1,070, 56%; Dejerine, 350, 66.8%. The records have been examined as regards the heredity in uncles and aunts, grandfathers and grandmothers, and the following table has been compiled, leaving out the cousins. Maternal grandfather and grandmother, 4 cases of epilepsy, 2 cases of insanity. Paternal grandfather and grandmother, 6 cases of epilepsy, 1 insane, 1 neurotic. Maternal uncles and aunts, 10 cases of epilepsy, 6 cases of insanity, 2 neurotic. Paternal uncles and aunts, 8 cases of epilepsy, 3 cases of insanity, 1 neurotic. The above results were obtained from among the females.

Among the males, maternal grandfather and grandmother, 1 epilepsy, 1 insane. Paternal grandfather and grandmother, 2 epilepsy, 2 insane. Maternal uncles and aunts, 13 epilepsy, 4 insane, 1 organic nervous disease. Paternal uncles and aunts, 6 epilepsy, 3 insane, 1 organic nervous disease. The total number of cases obtained from both male and female is as follows: 50 epilepsy, 22 insane, 4 neurotic, 2 organic nervous diseases, making a total of 78 hereditary diseases.

A later condensation of results is also given. Direct heredity is the same disease in blood relations. Indirect is alcoholism, insanity and migraine in blood relation. There are not more than 6 cases of migraine. Among the males the direct heredity is given as 29 cases on the father's side, 24 mother's side, 5 brother's side, 10 sister's side. Indirect heredity: father, 19 cases; mother, 21; brother, 1; sister, 2 cases. Among the females the direct heredity is 16 cases on the father's side; 25, mother's; 4, brother's; 6, sister's. Indirect heredity: father, 14 cases; mother, 15; brother, 3; sister, 4 cases.

Statistics from other sources are as follows: Hare, number of cases and per cent, very indefinite; Gowers, 2,400 cases, 40%; Spratling, 1,070 cases, 56%; Turner, number of cases unknown, 43%; Massachusetts Hospital for Epileptics, 1,172 cases, 14.04%.

The wide differences in these figures are ex-

plained from the fact that each observer has his own standard of what constitutes an inheritance. This point should be settled for us by our committee and a unity of terms and records established.

The kind and amount of work of which epileptic persons are capable has been variously estimated. The conclusions drawn appear to be arranged to suit the notion of the writer. I believe we have been misguided to an extent and that we must more fully recognize the invalidism of almost all such cases, especially of institution cases. The valetudinarianism of the epileptic is a theme of never-ending remark where masses of them are segregated.

It is not here worth while to discuss the matter fully. The idea is merely to recognize the inefficiency of such workers, the need of paid supervision and the actual value, which is often considerable, of the work done and especially of the value of work to the patient himself. As to recoveries and what we may expect in this direction, a few remarks may be permissible. When we speak of recoveries in epilepsy, we mean a case that has been free from fits for at least three years and that has returned to a normal state of mind. I would not class an insane person or one clearly feeble-minded as recovered, even if the fits ceased, without special mention of the permanent mental state; the fact would be noted as that of a person who no longer has distinct epileptic fits.

The percentage of recoveries in this state is not accurately determined. Of all persons who develop epilepsy, allowing fits in general to be epilepsy, at least 50% cease to have such convulsions and may thus be classed as recovered. Out of the cases that become well established, having a large number of seizures, the disease lasting for some years, at least 20% recover. This occurs among younger epileptics. Of the confirmed cases taking care of themselves in a community and being epileptics of long standing, about 5% recovered. Of the cases in the hospital at Palmer, most of whom have suffered mental impairment and who have had epilepsy for years, about 1% have recovered. The possibilities of recovery are good in certain cases.

(To be continued.)

SHALL THE TUBERCULAR PATIENT BE TREATED IN THE HOME CLIMATE OR SENT TO SOME REGION WITH A MORE EQUITABLE CLIMATE, WHERE MORE HOURS CAN BE SPENT IN THE OPEN AIR WITH LESS DISCOMFORT?

BY ISAAC WILLIAMS BREWER, M.D., BOSTON.

For many years climate was considered to be the all-important point in the treatment of tuberculosis. So greatly was the profession impressed with the value of the climatic treatment that as soon as a diagnosis was made the patient was hurried to some distant region that was reputed to cure the disease. In most cases the physician ordering the change had but a hazy idea of the

climate to which he was sending his patient, and in almost all cases he was ignorant of the hardships that the invalid would have to endure. No attention was paid to the condition of the patient, so great was the haste to get him to the promised land that would restore his health.

The results of this thoughtless and ill-advised movement of tubercular patients were anything but encouraging. Some few recovered, many dragged on for a short time, their end being hastened by the hardships of their new surroundings, while not a few died en route to the promised land.

One of my earliest recollections is connected with this question. At one time in the early seventies my father was stationed at a military post a few miles west of the highest point on the Union Pacific Railroad. Three miles from the fort was a small frontier town. Many and many a time have I seen the local undertaker's wagon at the depot to take off the body of some health seeker who had died in crossing Sherman Pass.

With the growth of the sanatoria and other methods of obtaining outdoor life in the East, there has been a change of opinion in regard to the value of climate and altitude in the treatment of tuberculosis. Institutions like the Adirondack Cottage Sanitarium have reported such good results that not a few physicians have concluded that the disease can be successfully combated in any climate provided the patient lives in the open air. The writer, while acknowledging the splendid results obtained in the eastern sanatoria, still believes that, all things being equal, better results can be obtained in the arid region than in the cloudy and humid atmosphere of the Atlantic states. After a year spent in the East this opinion has been greatly strengthened.

Dr. Osler, in discussing the subject of climate in the treatment of tuberculosis, says, "The requirements of a suitable climate are pure atmosphere, an equable temperature not subject to rapid variations and a maximum amount of sunshine. Given these three factors, and it makes very little difference where the patient goes so long as he lives an outdoor life."

Where in the United States do we find a pure atmosphere, equable temperature and maximum amount of sunshine? Surely not in or around any of our large cities in the East.

There can be but little doubt that the arid region of the southwest excels in purity of its atmosphere. There we find very few factories and other industrial establishments belching impurities into the air. Most of the impurities in our atmosphere are placed there by man or his instruments of labor. In Arizona the last census showed less than two persons to the square mile. The clearness of the air is so great that I have often seen buildings at a distance of eighteen miles and even further, while in the vicinity of Boston there are few days when my horizon extends more than five miles, and many days when it does not reach that limit.

As regards temperature, there are few regions

where the conditions more nearly coincide with the requirements given above. There is, indeed, a considerable difference between the heat of the day and the cool of the night, often amounting to 30°, but this is of daily occurrence and can be provided for. There is almost an entire absence of the rapid changes, cold waves, which are far from uncommon in our eastern states during the spring, fall and winter months.

The sun shines in the southwest more than in any other region of the country. Bright sunny days are the rule and cloudy days and days with continuous rain are rare. The southwest has received a bad name as regards wind, but my personal experience, covering nearly five years, has been that windy days are far less frequent than in the eastern states.

In Table I will be found a summary of the climatological data for the winter months for Phoenix, Ariz., and Boston. Table II shows the total number of hours of sunshine, and Table III, the number of days with precipitation for certain points on the Atlantic seaboard and in the southwest.

From these tables we learn that Phoenix is very much drier than Boston, that the winter days are warmer and the nights not so cold. As regards sunshine, the patient at Phoenix will have on an average three hours more per day than if he were in Boston. If there is anything in the outdoor life, it seems to me we must acknowledge the value of the climate of the southwest in the treatment of tuberculosis.

TABLE I.

CLIMATOLOGICAL DATA FOR PHOENIX, ARIZ., ELEVATION 1,087 FEET.

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Mean maximum temperature,	86	75	66	65	68	73
Mean minimum temperature,	56	46	38	39	41	46
Maximum temperature,	100	90	80	81	85	94
Minimum temperature,	36	30	22	23	24	31
Mean temperature,	71	61	52	52	56	60
Mean relative humidity, A.M.,	51	57	57	64	62	53
Mean relative humidity, P.M.,	26	32	32	37	28	24
Average precipitation,	0.4	0.6	0.8	0.7	0.7	0.6

CLIMATOLOGICAL DATA FOR BOSTON, MASS., ELEVATION 16 FEET.

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Mean maximum temperature,	60	49	40	35	36	43
Mean minimum temperature,	45	34	24	19	20	28
Maximum temperature,	90	75	66	70	64	76
Minimum temperature,	25	-2	-12	-13	-11	-1
Mean temperature,	53	42	32	27	28	35
Mean relative humidity, A.M.,	77	77	74	73	73	71
Mean relative humidity, P.M.,	73	73	70	70	70	69
Average precipitation,	3.9	4.2	3.4	3.9	3.6	4.3

TABLE II.

AVERAGE HOURS OF SUNSHINE PER MONTH.

	Oct.	Nov.	Dec.	Jan.	Feb.	March.
Boston,	185	132	149	151	170	195
Albany,	186	120	93	124	168	186
New York,	180	150	151	159	173	202
Philadelphia,	208	156	158	149	162	189
Baltimore,	211	165	159	162	179	211
Santa Fé,	281	239	228	231	224	278
Phoenix,	304	263	255	228	245	296

TABLE III.

NUMBER OF DAYS WITH PRECIPITATION (RAIN OR SNOW).

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total.
Boston,	10	11	11	12	11	13	58
Albany,	10	12	12	13	12	13	72
New York,	10	10	11	12	11	13	67
Philadelphia,	9	10	10	12	12	13	66
Baltimore,	9	10	11	12	11	13	66
El Paso,	4	3	3	3	3	2	15
Santa Fé,	5	4	5	6	7	6	33
Yuma,	1	1	2	2	2	1	9
Phoenix,	2	2	2	4	3	3	16

That there are many invalids who do badly in the southwest is not to be denied, but if these cases are investigated I am of the opinion that the cause will be found to be other than climatic.

The great objection to sending patients to that region is that the cost of living is more than those in moderate circumstances can afford. Accommodations at reasonable rates are hard to obtain, but in this respect there has been considerable improvement during the past few years. Excepting where there is extensive irrigation most of the food is imported from California and the railroads take from the people of Arizona "all the traffic will bear." At Phoenix there is an abundance of local fruit and vegetables and the alfalfa beef from the Salt River Valley is better than can be had in any eastern market that has come to my notice. I have not found the prices in Boston any cheaper than those in Arizona.

The social organization in the western towns is different from what we are accustomed to in the East. There people stand more on what they are, and less upon what their ancestors did. Amusements are of a different nature, there being few theaters and similar institutions, and the community depends upon itself for its diversion. Hunting, riding and prospecting occupy a considerable portion of the time of the people. Those who are interested in geology will find the territory of Arizona a most interesting study. The mountains and plains are covered with plants of beauty, and many of them are practically unknown to the professional botanist.

The Indians of the region are a most interesting study, especially the Hopi tribe which lives far to the north in the midst of the Painted Desert.

Many of the eastern physicians have an idea that there is plenty of work in the southwest and that an invalid can always support himself. This is far from true. There is an abundance of labor such as a healthy man can do, but the consumptive who is sent to that region in search of work is doomed to disappointment. Arizona, although rich in natural resources and a great producer of wealth, is poor as a commonwealth. Most of the money produced there goes to support those who live in fine houses in New York and other cities. The territory has no extra cash to expend for sanatoria for the benefit of eastern consumptives, but will, to the best of its ability, care for those who become indigent, which means a residence in the county poor house.

There is a movement on foot to establish a sanatorium in Arizona for the accommodation of

persons in moderate circumstances, but until such an institution is assured I advise that only persons with sufficient means to provide for their care for at least one year be sent to the southwest. If you have a patient in the early stages who has sufficient money to obtain first-class accommodations, either at a hotel or one of the sanatoria, I strongly advise that he or she be sent to the southwest, as the recovery will be more rapid.

The following is a partial list of the sanatoria in Arizona and New Mexico. Arizona: Phoenix: Palm Lodge, capacity 25, rates \$4 per day. St. Joseph's Hospital, capacity 35, rates \$16 to \$20 per week. St. Luke's Home, capacity 15, rates \$12 per week. Prescott: Pamsetgaaf, capacity 15, rates \$20 per week. Tucson: St. Mary's Hospital, capacity 30, rates \$15 per week (arrangements are made to receive a few free patients). New Mexico: Alamogordo: Fraternal City Sanatorium, capacity 100, rates \$7.50 to \$15 per week. Albuquerque: Southwestern Presbyterian Sanatorium, capacity 15, rates \$40 per month. St. Joseph's Sanatorium, capacity 40, rates, fifteen free beds, others pay from \$15 to \$25 per week. East Las Vegas: St. Anthony's Sanatorium, capacity 35, rates \$9 to \$15 per week. Lincoln: Ranch Sanatorium for Tuberculosis, capacity 20, rates \$50 per month. Santa Fe: St. Vincent Sanatorium and Hospital, capacity 25, rates, \$10 to \$25 per week. Sunmount Sanatorium, capacity 25, rates \$12.50 per week. Silver City: St. Joseph's Sanatorium, capacity 35, rates \$100 per month. New Mexico Cottage Sanatorium, capacity 65, rates \$83 per month.

In the above list there are about five hundred beds. None of the institutions have a rate as low as the Adirondack Cottage Sanitarium and many persons with the disease cannot afford to pay that little. Arizona and New Mexico are giving so much wealth to the East, cannot some of the many who have been benefited by her bounty return some of it to build and support an institution for those consumptives who have been stranded there while in their search for health?

THE NEW SILVER SALTS AS COMPARED WITH SILVER NITRATE IN THE TREATMENT OF OPHTHALMIA OF NEWBORN CHILDREN.

BY HASKET DERBY, M.D., BOSTON.

EVEN the sombre field of medicine is liable to the invasions of fashions, and the grave physician has in all ages found it difficult to maintain a judicial frame of mind in considering the claims of the various remedial agencies and processes which like meteors flash along the horizon before they are lost in obscurity. A new drug is discovered and found, in some cases, to favorably affect a hitherto intractable disease. Its efficacy is widely published, it is experimented with, its field of operation widens daily, old and approved methods of treatment are set aside in its favor. But later on disappointments occur, the cures it is said to have effected fail to stand the test of time, some new agent appears as a rival in public