three ingredients, alcohol, chloroform, and ether, possessed in different degree of stimulant and depressant quality. Of A. the salient effect is stimulation, of C. depression, and of E. the stimulant effect is more marked than that of C., less than that of A. The pharmacological values of the three drugs sum themselves algebraically in the mixture, and the comparative individual results are exhibited in a nutshell by Dr. Waller's elegant experiments.

THE DEGREE OF DEPRESSION AND RATE OF RECOVERY.

There is a profound difference between these drugs in reference to the chief desideratum of an anæsthetic, namely, degree of depression of nervous function and rate and degree of recovery afterwards. Dr. Waller finds of all the chloro-methanes and chloroethanes he has examined, the most toxic to be chloroform. "It is difficult to anæsthetise, but easy to kill nerve, with chloroform..... You may give your nerve too much, and thus kill it; you may give your nerve too little, and it is, without ever having manifested any deep anæsthesia, slowly and steadily drugged to death." Just that blow which can stun without killing is the most difficult to deliver. The case of ether is quite otherwise. It is comparatively easy to temporarily suppress excitability and maintain it suppressed for long periods without preventing complete recovery.

PRACTICAL BEARINGS.

Dr. Waller says: "Let me explicitly state that I regard these experiments (1) as confirmatory in high degree of the almost universally admitted greater clinical danger of chloroform than ether; and (2) as indicative of a possible good effect of CO₂ in the production of chloroform anæsthesia. With regard to the opposed systems of administering chloroform—(a) with much diluting air, (b) in stronger vapour and exclusive of air—experiments on isolated nerve indicate the second as the less dangerous mode of procedure."

From the above it will be sufficiently obvious that the lucid exposition which Dr. Waller gives of his recent experiments and of their bearings merits the attention of all who are concerned with practical anæsthetics.

NOTES ON HEALTH RESORTS.

Gmunden, in the Salzkammergut, is noted for its beautiful scenery. It lies on the Traun See at an altitude of about 1,370 feet, and is conveniently situated for visitors, owing to its station on the railway between Attnang and Ischl. Besides its climate, charming situation, and good accommodation, Gmunden has the advantage of possessing excellent brine baths and apparatus for æro-therapeutic treatment. We have received an illustrated guide book of the place and neighbourhood by Dr. Hanns Wolfsgruber.

*Hartzburg*¹ is less known to the English than to North Germans, amongst whom it ranks as a favourite summer health resort on account of its beautiful situation (altitude about 900 feet) on the northern slope of the Hartz Mountains, at the entrance to the valley of Radau. The neighbouring Juliushall brine baths (66 per mille of common salt) are useful in some chronic rheumatic and functional nervous affections and other conditions usually benefited by muriated waters. The railway station is one and a-half hour distant from Brunswick, and three hours from Hanover, which can be reached from London *via* Flushing in twenty-four hours.

Le Prese-Poschiavo is a beautiful summer resort on the Lake of Poschiavo, in Canton Grisons, about 3,160 feet above sea level, half an hour's drive from Poschiavo. It possesses cold weak sulphur waters, and the bath arrangements and accommodation are satisfactory.

The Kursaal Maloja, in the Upper Engadine, has become so well known to English visitors in Switzerland, that little need be said of it. It was constructed by the Belgian Comte de Renesse, and was opened in 1884. It is large and commodious, and there is an English medical man resident during the season. The situation at an elevation of about 5,940 feet, just at the boundary of the Italian Val Bregaglia and the Engadine, renders it particularly attractive. We have received a guide book of the place and neighbourhood, forming one of the series of *L'Europe Illustrée*, published by Orell Füssli, of Zurich.

¹ *Baths of Hartzburg, Brine Baths and Health Resort.* English edition, published by the Duke's Commissioner. Hartzburg: Rud. Stolle.

Schoenfels (altitude about 3,000 feet), near Zug, in Switzerland, may be useful in some cases in which a tolerably elevated locality, amidst beautiful scenery, possessing arrangements for hydrotherapeutic management, is needed.

Weggis may likewise serve as a quiet health resort in some cases. It lies on the Lake of Lucerne, at the foot of the Rigi, and affords good accommodation.

Notices of several pleasant summer resorts in the *Vorarlberg* are given in the third edition of *Sommerstationen in Vorarlberg* (Bregenz, 1896), which may be useful to intending visitors.

Abbazia, in Istria, at the north of the Adriatic, is becoming better known as a winter health resort. It is sheltered on the west by the Monte Maggiore, and against the "Bora" wind it is to some extent protected by the island of Veglia. The accommodation is good, and the place is kept open throughout the year.

Little known in England are the Baltic spas of *Heringsdorf* and *Misdroy*, of which we have received notices. England is so rich in seaside places that these localities are hardly likely to be specially recommended by English medical men, but in Germany they enjoy a good reputation for cases in which very bracing localities are not desired.

We have likewise received notices of *Mösseberg*, near Falköping, one of the best known localities for hydrotherapeutic treatment in Sweden.

A REPORT ON CYCLING IN HEALTH AND DISEASE.

[SPECIALLY PREPARED FOR THE BRITISH MEDICAL JOURNAL.]

By E. B. TURNER, F.R.C.S.

VIII.—TRAINING AND RACING.

UN SOUNDNESS.

EVER since the great athletic revival, now some thirty-five years ago, the question has been frequently raised whether it is wise for young men to engage in competition, and whether the after-effects of training are for good or the reverse. No young man should be allowed under any circumstances whatever to compete in a race—cycle, foot, or rowing—unless he be properly trained for that race, and no young man should ever be allowed to train unless he be thoroughly sound from head to foot. It stands to reason that if a man takes part in a hard finish to a well-contested race when out of training he must put his circulatory organs and muscular system to an intense strain, and one for which they are not prepared, with the almost certain result that some mischief more or less extensive will be done, and that if the effort be frequently repeated very grave symptoms will supervene. If, however, a man be gradually and properly brought into condition by a series of regular and progressive exercises, extending over some long period of time, his heart and all the other organs which have to participate in the effort will become habituated to the forced exertion, and will sustain the stress thrown upon them without either functional or organic injury. But it is necessary, if the human machine is to be brought to such perfection, that it should be absolutely sound before the preparation is commenced, for in competition any weak spot must be found out. It would, therefore, be a wise provision if every aspirant for racing honours were compelled to undergo a searching medical examination before being allowed to commence training, and whenever opportunity occurs the physician should insist on it. No one who has the slightest weakness of heart or lungs, or whose joints may be under suspicion, or who has lately recovered from some severe illness, such as enteric fever, or whose general physique is below par, should be allowed to race under any circumstances. Easy, gentle exercise will be good for them, as we have shown in a former article, but the tremendous strain of a "last quarter" would only too surely find out their weakness, even if they had not broken down in the preliminary practice.

THE BENEFICIAL EFFECTS OF TRAINING.

But if a man be passed sound, and be properly and gradually trained, may he compete and expect to sustain no harm? Putting aside all the good habits of regularity, abstinence, temper, and discipline which are cultivated by training and racing, may he expect benefit from the perfection to which he

has brought his bodily powers? The writer has had a more or less intimate knowledge of most of the men who have excelled in every branch of athletic sport for the last twenty-four years, and has examined scores of boys and young men before they were allowed to enter into competition, and frequently seen them afterwards, and with the exception of field accidents, such as sprains, fractures, and contusions from falls while racing, "hacks" at football, he cannot call to mind any mischief which in the case of a properly-trained and previously sound athlete could be attributed in any way to athletic competition, but, on the contrary, has seen many instances of great and marked improvement in stamina and physique in young men who, on commencing regular training, appeared to the eye weak and "weedy." Many cases have been brought under his notice in which some noted athlete has been supposed to have contracted severe illness, or even to have died "from the effects of training and hard racing"; but in most instances in which it has been possible to make inquiry, he has found that the mischief has been caused, on the cessation of active participation in athletics, by neglect of those rules of training which might well be observed for the whole of life, while in other cases death from enteric and tropical fevers, or falls from a horse have been put to the account of athleticism.

LONG-DISTANCE RACES.

Within the last few years there has been a tendency to increase the distance of races, and several cycle races have been held extending over 100 miles, six or twelve, and even twenty-four hours, and, in Paris, for six days. It does not seem possible that such competitions can be harmless, but as the result of careful examination no mischief can at present be detected in any of those who rode in them, nor were they much exhausted at the finish, and recovery was rapid. Time alone will show if any harm has been sustained. Of course, in such races, only picked men, who had been systematically trained for months, took part. One of the professional bicyclists, who rode in six-day races at the Agricultural Hall in the early seventies, was seen a week ago by the writer alive and well. Bicycle racing is a much less exhausting sport than foot racing or football, and those who have in former years competed with success should never, after a lapse of time, attempt to race again without a long and arduous preparation. The expert has trained his will to dominate his muscles, and can strive against Nature until he does himself harm. The novice does not know how to "run himself out," and stops exhausted before he is injured. No woman can train continuously on account of the menstrual period, and therefore cannot race with safety, other considerations apart.

SPECIAL CORRESPONDENCE.

PARIS.

Colonial Armies.—Treatment of Diphtheria in the Hospital for Sick Children.—Boxwood in Intermittent Fever.—Sanitary Inspection of Cattle.

At a recent meeting of the Society of Public Medicine and Professional Hygiene M. Poitou-Duplessis read a paper by Dr. Navarre on the organisation of a Colonial army. He strongly opposes the admission of drunkards and immoral men in this army. In unhealthy colonies they constitute a danger to others by the fact that they easily fall a prey to the maladies indigenous in the colonies, and thus quickly create an insanitary centre. Dr. Navarre points out the fallacy involved in the belief that acclimatisation can be effected. He asserts that what is necessary are good sanitary and hygienic regulations and habits. A healthy European can thoroughly resist during one year the unhealthy Colonial influences, but after two or three years' residence it is necessary that he should return to his native country. There is no acclimatisation capable of combating liver disease, dysentery, or intermittent fever. Colonial armies should be composed of picked men as far as physique is concerned. Nevertheless, after a few years' service, they will be as liable to contract diseases as they were in the first few months of their arrival.

Dr. Navarre referred to the excellent condition of the English soldiers doing duty in India, and affirmed that the English have abandoned the idea of acclimatisation.

M. Sevestre since 1894 has directed the diphtheria services at the Sick Children's Hospital. Since M. Sevestre has had the treatment of the diphtheria patients the serum injections have been systematically employed. He has published the following statistics: Among 1,140 children admitted into the diphtheria section, 158 died; 87 of these died twenty-four hours after admission. After eliminating these hopeless cases, the diphtheria mortality is 8.13 per cent. Even if this detail is not taken into account, the result of the serum treatment is eminently satisfactory. From 1890 to 1893 the average diphtheria mortality varied from 48 to 56 per cent. In 1894 the serum treatment reduced the diphtheria mortality to 21 per 100. At the present time it is reduced to one-half of the average mortality occurring before 1894. M. Sevestre has treated several cases of streptococcus infection associated with diphtheria with Marmorek's serum; its effect on the throat was good; the false membranes were more easily removed, the glands became rapidly smaller, but the general condition of the patient remained the same. Local abscesses often formed after the injections of this serum. All the children admitted under M. Sevestre are treated with injections of Roux's serum before the bacteriological examination is made, because often diphtheria cases appear benign and become malignant. When there is gastric trouble he gives calomel. In the treatment of children with pneumonia he recommends benzoate of sodium, cold baths when there is fever without pneumonia. Hypodermic injections of caffeine and of Hayem's artificial serum have rendered great service in serious cases, giving the patients strength to hold out until the serum acted.

M. Artaud de Vevey and M. Gadot have treated intermittent fever of hepatic origin successfully with sulphate of buxine (boxwood). According to these authorities, boxwood should only be used in liver complaints complicated with fever and characterised by parenchymatous lesions; in such cases it acts as a cholagogue. Its good effect is specially marked in combating jaundice and fever. The best preparation is tincture of boxwood mixed with a solution of gum arabic, tincture of boxwood 2 grammes, gum julep 100 grammes. This quantity should be taken in the course of twenty-four hours in doses of from 2 to 4 grammes.

The Minister of Agriculture has sent to the French prefects a circular dwelling on the necessity of insisting on a proper sanitary inspection of the cattle sold in fairs and at cattle markets. They are directed not to sanction fairs or cattle markets without previously ascertaining that the municipalities concerned can bear the expense of a sanitary inspection of the animals offered for sale. In fairs and markets already legally sanctioned which cannot be inspected by a sanitary inspector, either because the gathering is not sufficiently large, or the cost of such inspection would be too great, the inspection may be entrusted to an intelligent farmer or landowner.

BERLIN.

The Industrial Exhibition.—General News.

THE Chemie Gebaude, architecturally the most original and beautiful of all the exhibition buildings, is entirely devoted to chemical and pharmaceutical preparations, photography, including Roentgen ray apparatus, scientific and medical apparatus, and surgical instruments. The Chemie Gebaude contains a lecture theatre, with fittings for scientific experiments, and of the public lectures frequently given, many are on scientific medical subjects. Among others, Waldeyer, Witt, and Schweninger have lectured. In the building devoted to hygiene and public health we find models and drawings of hospitals and asylums, of public and private sanitary improvements, etc. Here is the exhibition of the Imperial Board of Health, which contains a library consisting of all the publications issued by the Board; diagrams and tables of small-pox and vaccination, to illustrate the efficacy of the German vaccination law of 1874; diagrams and tables of tuberculosis, cholera, etc.; and an eminently practical working table by Dr. Meissner, executed by Zeiss, of Jena. Outside the building, barrack tent hospitals and ambulances