

JUJUTSU.¹

THIS work gives most clearly and concisely an idea of the fascinating art of jujutsu. It is written with the idea that anyone having had a few lessons may continue the exercises, or throws, without the constant help of a teacher, though to learn from the description only would be quite impossible.

Sir Lauder Brunton has given an admirable preface, from which it may be inferred that the medical profession thinks highly of jujutsu as a matter of exercise for both sexes. He says:—"By it not only is every muscle strengthened, but the highest centres of the brain are developed, those whose functions are perception, discrimination and decision."

Japanese wrestling, or jujutsu, differs entirely from the English form of wrestling, which is more or less a trial of strength. In jujutsu it is a question of quickness and brains; the throws are given by taking advantage of the opponent's movements, so that as the attacker advances the opponent trips him up, or gives the throw, by profiting by the momentum of the attacker's body, placing his foot, leg, or arm in

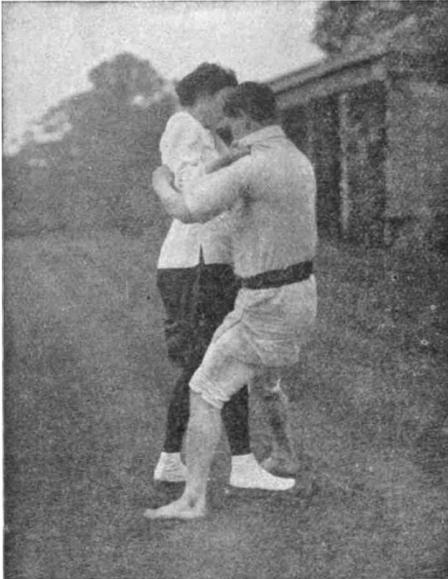


FIG. 1.—First position of the Uchimata, showing the lifting pull of the thrower's right hand. From "The Fine Art of Jujutsu."

such a position that the attacker cannot save himself from falling. In fact, the momentum of the attacker is used to his own detriment.

In commencing, the pupil learns to give the "Laudori Kata," which form the basis of nearly fifty methods of defence against various attacks, and not until the pupil has had many lessons is he or she allowed to learn how to take a fall. There is as much to learn in taking the falls as in giving them, and, provided he follows the teacher's instructions exactly, he need not be afraid of getting hurt.

After several of the throws have been separately mastered the pupil is taught to put them in practice in the "loose play," and here it is that the real delight of jujutsu commences, for all his faculties must be alert; he may trip up his teacher with an ankle throw; or, taking advantage of some side movement, may give the "Hizagurama" or trip from the side of the knee; or he may turn sharply round and give the shoulder throw, bringing his

¹ "The Fine Art of Jujutsu." By Mrs. Roger Watts, with 141 Action Photographs by G. W. Beldam. Pp. viii+146. (London: W. Heinemann, 1906.) Price 6s. net.

opponent over his shoulder on to the ground. Then, when well advanced, the pupil takes his chances against his teacher, and the struggle to put in a throw on either side becomes very exciting.

One great delight of these exercises, as mentioned in the preface, is the extreme accuracy which is absolutely necessary; if a certain movement is not done correctly it cannot be done at all. If the opponent fails to take advantage of the movement of the attacker at the right instant it is impossible by main force to effect a throw.

Perhaps the most difficult throws are those given in Figs. 44 and 45, which are here reproduced, called the "Uchimata," for it requires immense practice to get the balance necessary to gain the second position.

Besides the throws, there are many locks which are most effective in overcoming an opponent. Fig. 111 and the following series represents one of these in detail, by which, when used in self-defence, it is not difficult to break the elbow of the attacker.

In addition to the jujutsu described in these pages

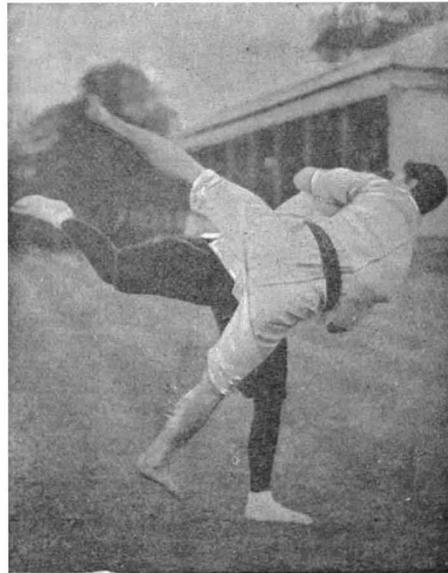


FIG. 2.—Second position of the Uchimata, showing the full fling up of the thrower's right leg while standing poised on the left. (From "The Fine Art of Jujutsu.")

there is another form, which consists in wrestling on the ground, where the throws are given and are finished by a lock on the ground; but this is such a very rough form of exercise that it is not described in Mrs. Watts's book.

We have not yet alluded to the excellent illustrations by that well-known amateur photographer Mr. G. W. Beldam. Without them the text would be impossible to follow, and to have caught the different positions so exactly shows immense patience and ability on his part.

T. MARY LOCKYER.

SCIENTIFIC WORK IN EGYPT.¹

THE work of the Survey Department in Egypt embraces many inquiries outside those usually identified with geodetic measurement. The department is responsible for the conduct of a laboratory in which analyses of rocks, ores, and minerals are made for the Geological Survey, where the illuminating

¹ "A Report on the Work of the Survey Department in 1905." By Capt. H. G. Lyons, F.R.S., Director-General. Pp. 76+plates. (Cairo: Al-Mokattam Printing Office, 1906.)

power of the Cairo gas is determined, and where paint, oils, cement, asphalt, &c., are tested for commercial purposes. Further, the purity of the water supply of Cairo demands constant attention, while the river water and the silt which the Nile carries in suspension during a large portion of the year have to be repeatedly examined. These are matters which must be passed over with a bare mention, though doubtless the management finds the addition of such investigations sufficiently exacting.

More immediately connected with the work of the department appear to be the hydrographic survey of the Nile and river gauging. For the efficient examination of questions connected with this subject a permanent gauging station has been erected at Sarras, thirty-three miles below Wady Halfa, and here are measured in various ways some of the factors that determine the quantity of water in the river. The work is hardly out of the experimental stage at present. A main object is to determine the most appropriate kind of apparatus that will give accurate results with the least expenditure of labour. This section is very interesting, and tables are added showing the volume of water discharged in cubic metres per second, and the mean velocity per second, with other details. The velocity and volume both increase up to the end of August, when, unfortunately, observations were discontinued, though the time of maximum was not reached. A preliminary discussion of the results has shown that the volume of the discharge at Khartoum, when the Atbara was not contributing, was greater than that at Aswan by amounts which could not be explained by loss from evaporation or from use in irrigation. The cause of the loss is not yet decisively explained, though Captain Lyons makes a plausible suggestion.

Another feature of the report is the description of the Helwan Observatory, which seems to be very fairly equipped with magnetic, meteorological, and seismological instruments. Of the astronomical portion, we learn that the 30-inch reflector presented to the Egyptian Government by Mr. R. H. Reynolds, of Birmingham, is in course of erection, and that all the heavy castings are in position. Some of the mechanism has been returned to England for alteration, and the completion of the erection awaits the return of these essential fittings.

Of the geodetic work properly so-called, details are given of the second order triangulation with all necessary fulness. The standard of accuracy attained is not quite that of the highest order, but sufficient for the object for which the measurement was undertaken, namely, the control of the map sheets used in the revenue survey of the country. It is now possible to base a map of Egypt on a connected triangulation from Damietta to Wady Halfa, an extent of nine degrees. Of even greater importance, however, is the triangulation, which it is to be hoped will be ultimately carried out, whereby Egypt will contribute to the measurement of the arc of meridian, which in its entirety will extend from the Cape of Good Hope to the North Cape, along the thirtieth parallel of east longitude. For several years Sir David Gill has been engaged in carrying this chain of triangulation northward, and the prospect of completing a measured arc of some 100° of latitude cannot but be of profound interest to the astronomer, the geologist, and the physicist. Captain Lyons, however, is fully aware that the value of such a work consists very greatly in the maintenance of the same standard of accuracy throughout. The most difficult problem of geodesy, he tells us, is to pass from a particular platinum and iridium bar, on which the length of the metre is defined, to the length of a base line over a more or

less rough land surface with as great an accuracy as possible. Viewed in this light, the most interesting portion of the report consists in the description of the method of the comparison of the bars and Jaederin wires used in Egypt. The accuracy seems quite satisfactory.

W. E. P.

INTERNATIONAL FISHERY INVESTIGATIONS.¹

THE results of the first two or three years of active investigation in connection with the general scheme of fishery research, which is being carried out in the seas around north Europe under the auspices of the International Council for the Exploration of the Sea, are now being rapidly published in a series of reports issued in part by the Bureau of the International Council and in part by the authorities of the different countries participating in the international scheme. As the outcome of the work is being thus gradually brought to light, the comprehensive character of the programme becomes increasingly obvious. The remarkable scientific interest of the results obtained from what is probably the greatest and most serious attempt yet made to carry out a scientific investigation by means of international cooperation is placed beyond dispute, nor can it be doubted that the eventual practical benefit of these researches will be of even more importance and of much direct value to the fishing industry.

The first report under review contains detailed accounts of some of the work carried out in 1902 and 1903, whilst in the Marine Biological Journal Mr. James Johnstone, of the Liverpool University Fisheries Laboratory, gives a useful *résumé* of the results published up to the summer of 1906. The remaining reports deal for the most part with more recent publications.

As must be by this time well known, three main lines of research are being developed in the international scheme, the hydrographical, the biological, and the statistical. The hydrographical investigations record and endeavour to explain the constantly changing physical conditions under which fishes pass their lives; the biological investigations aim at a complete account of the life-history of the more important food-fishes, as well as a detailed knowledge of the various smaller marine creatures which serve as the food of fishes; the statistical investigations deal primarily with the variations in the actual quantities of fish removed from the different fishing-grounds and brought to market, and at the same time yield considerable material which is capable of supplementing and amplifying the knowledge of the history of the fishes obtained from the biological observations. Although the three branches of the investigation are for practical reasons carried out more or less independently, the ultimate success of the work depends upon the judicious combination of the knowledge gained from each, and its application to particular problems of the fishing industry.

A striking example of the success of such a combin-

¹ Reports of the British Delegates attending the Meetings of the International Council for the Exploration of the Sea in 1903, 1904 and 1905, and Reports and Correspondence relating Thereto. Vol. ii., General Report of the International Council for 1902-1904 [Cd 3033]. A Reprint of Conseil permanent international pour l'Exploration de la Mer. Rapports et Procès-Verbaux, vol. iii. (London: Printed for H.M. Stationery Office.)

Conseil permanent international pour l'Exploration de la Mer. Rapports et Procès-Verbaux, vols. v. and vi.: Bulletin trimestriel des Résultats acquis pendant les Croisières périodiques et dans les Périodes intermédiaires, Année 1905-1906, No. 3, Janvier-Mars, 1906; Bulletin statistique des Pêches maritimes des Pays du Nord de l'Europe, vol. i. pour les Années 1903 et 1904.

Journal of the Marine Biological Association of the United Kingdom, vol. vii., No. 5.