of London. A vote was also taken as to the place where this International Congress of Dermatologists should meet in 1892, when the choice fell on Vienna, for which fifty-two votes were given; London received thirty-seven votes, and Hamburg one. Another result of the meeting has been the formation of a French Dermatological Society, with M. Ricord as its President.

FOREIGN UNIVERSITY INTELLIGENCE.

Christiania.—Dr. Torup of Copenhagen has been offered and has accepted the chair of Physiology.

Halle.—Dr. Erich Harnack has been promoted to the post of Professor of Pharmacology.

Kharkoff.—Dr. Kulshiski has been appointed Extraordinary Professor of Embryology and Histology.

Kiel.—Professor Weber of Breslau has been offered the Professorship of Physics.

Montpellier.—M. Granel has been recommended by the Professorial Council for the vacant chair of Botany, and M. Imbert for that of Medical Physics.

Zurich.—Professor Lang of Jena has been offered the Professorship of Zoology.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following eminent foreign medical men are announced:—Dr. Arthur Böttcher, Professor of Pathological Anatomy in Dorpat, and formerly co-editor of the *St. Petersburger Medicinische Wochenschrift*, at the age of fifty-seven. Professor Böttcher had published many researches on the Pathology of the Liver, Kidney, and Gall-bladder, and had obtained the Baer prize of the St. Petersburg Academy of Sciences for an elaborate research on the Structure of the Labyrinth of the Ear.—Dr. P. Koch, Chief Medical Officer of the Congo Free State.

THE Government of New South Wales has appointed a committee, consisting of Sir Charles Nicholson, Bart., M.D., D.C.L., Sir James Crichton-Browne, M.D., LL.D., F.R.S., the Hon. H. N. MacLaurin, M.D., LL.D., and Sir Saul Samuel, to select designs for four large stained glass windows, which are to be placed in the Medical Hall of the University at Sydney. The windows are to contain sixteen full-length figures, and it is desired that these should represent the Fathers of Medicine and the most eminent members of the medical profession down to the present time, so that the youths of the colony entering on the study of medicine may be perpetually reminded that their science and art have had an illustrious history.

VENICE, to the great satisfaction of her population, resident and migratory, is to undergo a complete sanitary rehabilitation. The works to be commenced with this object will spread over ten years, and the first provisional estimate of the outlay amounts to some four millions and a half francs. In conjunction with this purely hygienic undertaking, a plan for remodelling the city architecturally will also be carried out, for which a period of thirty years is computed to be necessary.

CONGRESSES, for medical and surgical objects particularly, seem to multiply in Italy. On Sept. 1st will meet at Ancona the "Congresso Medico Marchigiano" (Medical Congress of the Marches), and the programme, an extensive and varied one, will occupy the remainder of the week. Other professional Congresses, also purely provincial in their objects and membership, are announced for the autumn months.

CATCHING AND "CRIMPING" FISH.

BY J. LAWRENCE-HAMILTON, M.R.C.S.

No. II.

As compared with other vertebrates, it is stated that the relative proportion of myosin or muscle clot, one of the chief albuminoid bodies or proteids in muscle, is greater in fish than in land animals. The coagulation of the myosin causes the contraction of the muscular fibres in fish to be long retained even after death, and is supposed to give the flesh of fish transversely gashed or *crimped* a firmer and crisper taste, whilst some observers declare that the specific gravity of the muscular fibres is increased. During the post-mortem coagulation of the myosin acids are liberated and heat is evolved. Crimping is usually performed prior to death, and always previous to the subsequent cadaveric rigidity or rigor mortis. The most successful crimping is attained on capture by at once bleeding the fish whilst still alive, which bleeding immediately produces faintness, passing rapidly into insensibility. It is obvious that it is useless to resort to bleeding when blood-clotting has commenced. Except the red-fleshed, ham-like tunny, fish have generally comparatively little blood to lose. The pink colour of the salmon family is due to feeding largely on minute shell-fish, which its digestion turns red, as if boiled. The alimentary juices of the rock pouter, a kind of whiting, also convert the shells of crabs into a pink colour. In crimping, the sharp powerful blows on the head of the fish prevent the fish exhausting its muscles by convulsive efforts. When the flesh-gashing is finished, the animal is immersed in cold clean spring water. The larger and thicker the mass of flesh to be crimped, the longer the reaction of muscular contraction is delayed. Prior to crimping, after the bleeding, the fish should be gutted, and cleaned inside and out with abundant washing in fresh flowing cold water. British fishermen have an unfounded prejudice that bleeding injures crimping. Medical jurists have noticed that cadaveric rigidity occurs relatively early after severe hæmorrhage, and that from a corpse an amputated limb previously drained of all its available blood still shows post-mortem rigidity. Some physiologists consider crimping and rigor mortis to be both chiefly due to the contraction of muscular fibres caused by the coagulation of the contained myosin. Crimping fish by exposing an extended superficial surface, and that mostly deprived of its skin, to moisture, air, temperature, and bacteria, thus rapidly increases the tendency to putrefaction. Hence both the fish trades and the public would benefit by the abolition of this frivolous food-wasting fashion.

Ruining the fisheries, robbing the fishermen alike of their netted and hooked fish, the ever-hated dog-fish, on capture, without previous bleeding or gutting or being stunned, is sometimes crimped alive in writhing agony till death relieves the tortured but torturing animal of its sufferings. Where, however, there is no market for the dog-fish, then, on capture, often, its saleable liver is cut out and kept, and the mutilated fish thrown back into the sea, to die a lingering death. The dog-fish, perhaps, like its bigger brother the shark, may possibly also be kept ever hungry, ever feeding, and ever ferocious by the insatiable appetites of herds of various species of internal parasites, especially tapeworms, which cruelly torture and torment the digestions of their unwilling hosts. It is said that shoals of dog-fish will even attack and eat piecemeal the living whale.

As every schoolboy knows, live-bait fishing consists of inserting a collection of hooks through a small living fish, and then sinking it in the water. However much this sport may fascinate a professional angler, it is cruel martyrdom to the tortured little fish.

Some Kent fishermen having caught a big sturgeon, attached a rope to its tail, and thus towed their living prisoner up the Thames to sell it to an aquarium. The rope had cut its way down to the animal's backbone, who nevertheless speedily recovered in the aquarium, thus indicating, anyhow, that some kinds of fish recover from serious wounds with remarkable quickness, and even from wounds which would probably be fatal to most land animals.

In welled boats, halibuts are hung up by their tails, under the delusion that in these artificial conditions the fish will enjoy longer lives, and that their flesh will keep longer

fresh for the market. These local injuries must not be mistaken for those caused by the alleged habit of halibuts at the bottom of the sea, arranged in parallel rows, waiting and watching for small fish and shell-fish. When failing such food-supplies, the hungry halibut attacks and eats the tail of its nearest neighbour, which explains the frequently injured and absent tail of freshly-caught halibut. Hake hooked near the surface vomit on board, but if hooked at a greater depth it vomits before reaching the surface. Pursued by bigger fishes, the smaller fish will sometimes vomit the contents of their stomachs, partly through fear, partly to lighten their load, so as to be able by quicker swimming to escape, but perhaps, also, like the sea-gull chased by the skua, or dung-bird, so as to appease the not over-fastidious appetite of its pursuer, who thus gets partly digested or naturally cooked food. Many of the sea-cucumbers (*Holothuriæ*) on injury or irritation eject part or all of their internal organs. Some fish disgorge for the pleasure of again eating their vomited food. Crabs attacked by sea-birds shed their claws and legs in succession. It is stated that sometimes hooked fish get their skins inflated by accumulated air between the skin and subjacent muscles, and that such fish rise to the surface unable to sink. A fish hooked in deep water and quickly drawn up to the surface is like an animal hunted up-hill to death, or like a man rushed up in a balloon, and hence the suddenly diminished pressure, to which fright and pain are added, frequently brings up such fish dead at the surface of the water. Frank Buckland stated that he believed that a fish held by a hook in a very rapid stream would be drowned by the rushing water holding it like a vice on each side, and thus not allowing the gill covers to expand.

A fish is said to drown in the air like a man drowns in the water or is strangled in the air. In each case the air is prevented from getting to the breathing apparatus. In man, because, in drowning, the water intervenes, though perhaps also to spasm of the glottis acting as a sphincter. Experiments by Sir Benjamin Brodie and Dr. Goodwyn with coloured fluids and quicksilver showed that in animals drowned under observation the small amount of fluid entering the lungs was not sufficient to account for death. In man also death by drowning may arise from exhaustion, shock, apoplexy, disease of the heart, concussion, injuries, or from mixed causes. The gorging with water of even the minute vessels of the lungs in certain cases of drowning may be chiefly due to post-mortem changes. In fish, the numerous minute bloodvessels composing the gills or fish lungs, rapidly drying, stick together and get choked up. Hence the familiar violent open-mouthed gasping of fish when landed. In the air, the fish strives in vain to separate its gill filaments, which it cannot do without the intervention of water. (There are exceptional families of fish which can breathe in air for long periods together.) Anglers often drown fish in the water. The moment the fish is hooked, it rushes about in frantic fright, rapidly running through the successive stages of undue energy, exercise, exertion, and exhaustion. The faster and more furious the fish fights or struggles, the faster it breathes and overworks its heart, till it is fully pumped out of breath, when the knowing sportsman pulls the captive fish's head to the surface of the sea or stream, "between wind and water," and finally, raising the fish's mouth out of the water, the exhausted animal becomes more and more faint, feeble, and giddy. Its gills adhere together, and virtually cease acting. The blood becomes over-carbonised, and hence the fish drowns or suffocates whilst still in the water.

It is said that at 100 fathoms, or 600 yards, the pressure of the sea water exceeds 265 lb. to the square inch, and hence securely corked empty glass bottles sunk by means of weights below 100 fathoms become crushed. If filled with water, the cork is driven inwards, and in drawing up the bottle to the surface, the cork is often found returned in an inverted position to the neck of the bottle. As a practical rough-and-ready approximation, it is estimated that for every 1000 fathoms, or 18,000 feet, the pressure may be considered as about one ton to the square inch. To haul up one of the deep-sea lines used in the *Challenger* deep sea dredging, it took the fishermen from twenty to thirty minutes; and to avoid such hooked fish being blown to pieces, and leaving only a small shred of their individual anatomy attached to the hook, these abyssal fishes must be withdrawn very slowly and gradually. Raised from these colossal depths, the diminished pressure distends the gases inside the fish, especially should it be provided with an air

bladder, and causes the fish to get to the surface (if not dead, almost powerless) in a rigid cataleptic spasm, usually with its stomach inverted and inserted into or through its mouth. Its eyes are started and stalked from their natural sockets, protruding outwards like horns. Frequently such fish, each weighing from 25 lb. to 50 lb., on approaching the surface, will be shot out of the water at some distance beyond the boat, because the animal is sent upwards by the expansion of its contained gases, quicker even than the experienced deep-sea fisherman can haul in his prize.

In trawling, owing to the pressure of the net and its contents, fish, especially herrings, are often hauled dead into the fisherman's boat. Strangled and drowned in the meshes of the net in water, herrings putrefy even too rapidly to be serviceable to the professional fish-curer, who frequently cures fish which in their so-called "fresh" condition would be unsaleable and uneatable. It is said that if an elastic band be placed round the gill-covers of a fish in an aquarium it makes violent efforts to escape this strangling. It moves rapidly in hurried fear and excitement in its tank, and will at times attempt to leap out of the water. It soon dies with the rapid invasion of cadaveric rigidity and early putrefaction. Now, the herring strangled in the mesh of the fish-net is also much pressed upon and banged about, handled more or less with dirty hands, all being extra conditions to aid, advance, and accelerate rapid decomposition. If, before capture, the herring should have over-distended its stomach and intestines with undigested food, then putrefaction sets up so rapidly that such herrings are even useless to the fish-curers, who technically term this condition "gut-pock." Some American and Swedish fishermen, after an abundant catch of herrings, whose insides are over-distended with recent undigested food, pen up the herrings alive in the nets sunk in the water, to give the animals time to digest their food, and thus avoid the loss of the herrings from the invasion of subsequent "gut-pock," which I trust later to treat of purely from biochemical and microscopic researches.

Some twenty-four hours after capture, notoriously unbled and ungutted herrings are peculiarly prone to post-mortem spontaneous pouring out or extravasation of blood, which darkened, damaged, and bruised appearance is quaintly recognised in fish-trade slang as "over-day tarts." Medical jurists have pointed out that in drowned persons putrefaction usually begins about the head, whilst the rest of the body may remain normal. Post-mortem spontaneous bleeding is probably due to the softening of the vessels from early and incipient putrefaction, to the influence of gravity, and to the irregular post-mortem stagnation of blood in the capillaries (apparently some of the colouring matters and extractives pass into and remain in the tissues also as a putrefactive change). The process of the coagulation of the blood intensifies the appearance of these post-mortem effusions or extravasations. Possibly the cadaveric rigidity affecting the heart and the coats of the arteries prior to the post-mortem rigidity of the voluntary muscles forces blood into the venous capillaries, where it unequally stagnates, simulating the appearance of recent bruises during life. (In some fish the heart beat forcibly long after all other signs of life are apparently extinct. A frog's heart separated may be kept pulsating in certain nutrient solutions. A freshly decapitated eel's head will bite. Dead mackerel are said even to "turn somersaults" owing to excessive sudden rigor mortis. The post-mortem quivering of some snakes explains the popular belief that snakes never die till sunset.) On death the skin loses all its previous elasticity. Medical jurists lay special stress upon the fact that this cadaveric lividity is chiefly seen in those dying suddenly in full health or by a violent death (as hanging, drowning, strangling, apoplexy, &c.), and is but very rarely seen in those who have died of hæmorrhage—another proof why fish should be bled on capture. If a stout muscular person has died suddenly, and the body is then wrapped up closely and tightly in a sheet and allowed thus to cool, then post-mortem bleeding may make a zebra-like series of stripes or bands, suggesting recent flogging during life, from which it is distinguishable by the fact of the skin being unbroken. Now, the above phenomena happen to herrings drowned in the meshes of nets, who suffer squeezing and squashing both from the contents of the nets and from the heavy weights of their thoughtless

captors. In the herring the chief post-mortem bleeding takes place first about its head, gills, gill-covers, and fins, and a little later internally along and around its backbone or spinal column. In the skate its mucous secretion continues for a time, apparently, after its death.

In fish, as in man, all contused or incised wounds and bruises during life, as well as post-mortem spontaneous bleedings, rapidly pass into early putrefaction. In fish these decompositions take place with much greater rapidity and energy, which natural putrefactive processes are terribly increased and accelerated by ignorant, wasteful, and unnecessary exposure to abundant air, moisture, heat, sun, rain, pressure, banging, bruising, wrenching, twisting, hammering, packing, and handling; to many varieties of solid, liquid, and bacterial filth, and to melted or melting ice. The consideration of these fish-spoiling combinations, wastefully sanctioned by chronic conventional custom, and the general indifference and apathy of the public and the medical profession to fresh fish preservation, I propose to treat of in my next contribution to THE LANCET, which has from the earliest traditions of its history always opened its columns for the discussion of all matters connected with a cheap, abundant, and healthy food-supply for the people.

THE IRISH PRISONS BOARD REPORT.

THE report made by the General Prisons Board of Ireland to the Lord-Lieutenant upon the operations under their supervision during the past year brings to light the welcome fact that in the sister island, as in Great Britain, the statistics of the past few years show a steady and marked reduction in the numbers of the convict population. In the short period of seven years past this reduction has amounted in the case of male convicts to 41 per cent., and in the case of females to 56 per cent. So pronounced an improvement has enabled the Board to recommend that the work of enlarging the convict prisons of Ireland should not at present be proceeded with, although a Royal Commission which sat only so lately as 1884 recommended a very considerable outlay of public money with that object. The Board, in discussing the question afresh, remark that a most material change of circumstances has ensued since that date, which was then probably not foreseen, and adduce the above figures in support of this view. The fact is certainly very remarkable, and, fitting in as it does with our own experience on this side of St. George's Channel, affords ground for a most encouraging hope that we are coming to a time of "sweeter manners, purer laws."

In another branch of their labours the Prisons Board have met, however, with less gratifying results. The number of commitments to prison for small offences shows, as compared with the preceding year, a very considerable increase, and this increase is largely made up, as we gather, of commitments for drunkenness. This one offence accounts, indeed, for nearly one-half of the total number of such imprisonments, and we have it on the authority of the Board that the criminal records show this great social evil to be extending.

One very important point in the theory of punishment is strikingly illustrated in the present report—that, namely, of the effect of short sentences upon habitual offenders. The remarks of the lady superintendent of the Grangegorman Prison upon this subject merit careful attention. She says: "I beg respectfully to inform you that the number of prisoners committed to this prison for the past year was excessively high, being over 8000, and to draw your attention to the fact that this number includes a great many old offenders, who were recommitted several times through the year, and generally for such short sentences as to deprive the imprisonment of the deterrent effect that longer ones might exercise. I may refer to one (case), L. K—. This woman was committed to this prison thirty-four times last year, and never received a sentence for a longer term than fourteen days." A footnote adds that this particular offender had been committed 146 times in previous years, so that she has suffered 180 imprisonments in all. In such a case it is ridiculous to attempt to turn the offender into better courses by ordinary means. Our correctional appliances will continue to be absolutely helpless in a case like this until it is clearly

recognised that persons of this class are not capable of regulating their own conduct. An asylum, not necessarily a lunatic asylum, but a place where they could be subjected to the exact amount of restraint necessary to keep them out of mischief, is the right place for such people. The confinement of the Bridewell is probably unnecessarily severe while it lasts, and it has the fatal defect of being intermittent. Not severity, but continuous care, is the remedy for such mental and moral disorder as this wretched creature exhibits.

MEDICAL OFFICERS OF THE ARMY AND NAVY.

THE report of the Committee of Inquiry into the pay, status, and conditions of service of medical officers of the Army and Navy has now been presented to both Houses of Parliament. Dealing first with the Army, the Committee consider the question of full pay, the rates of which were settled by the Royal Warrant of 1879, and the conclusion come to is that there is nothing to show that the pay is extravagant. The evidence received leaves it doubtful whether, if lower rates were offered, the same class of medical officers would be obtained. Careful inquiry has been made from those persons considered most likely to be able to suggest reductions, but without any success. As to retirement, it is pointed out that the large number of retired officers is owing to two causes: first, the compulsory age of retirement—namely, sixty for surgeons-general and deputy surgeons-general, and fifty-five for the executive ranks; and, secondly, to the right which every medical officer has to retire after twenty years' service. The Committee do not see their way to propose any alteration in the age for compulsory retirement in the case of the executive ranks; but, with reference to administrative officers, they see no reason why the surgeons-general should not continue to serve up to the age of sixty-two. No interference with the right to retire after twenty years' service is suggested, but the Committee are of opinion that, without altering the conditions of retirement or the rates of retired pay, more service might fairly be required from medical officers. It is believed that the financial saving must be chiefly effected by limiting as much as possible the establishment of officers, and it is recommended that at small home stations, where there is not more than two or three hours' ordinary daily work for the medical officer in charge, civil practitioners should, where practicable, be employed. Passing to the question of rank and title, the Committee point out that medical officers of the Army, especially the younger officers, are not contented with their present position, relative rank, which they contend was the only rank they ever held, having disappeared. The grievance of medical officers of the Army on this score appears to the Committee to have originated in great part from the abolition of the regimental system. On this question the conclusion of the Committee is as follows:—"We are of opinion that, in the Queen's Regulations and Army List Warrant, it should be stated that the officers of the Army Medical Department shall hold the following military ranks with relative army ranks, a table of which we append. We recommend that relative army rank, the abolition or omission of which has immediately caused the present discontent, should be restored in the following manner:—

Present Title—Medical Staff.	Proposed Rank and Title—Royal Medical Staff.	Relative Army Rank.
Surgeon-General ..	Surgeon-General ..	Major-General
Deputy Surg.-General	Surgeon-Colonel ..	Colonel
Brigade Surgeons, and Surgeons-Major now ranking as Lieutenant-Colonels	Surgeon Lieutenant-Colonel	Lieutenant-Colonel
Surgeon-Major ..	Surgeon-Major ..	Major
Surgeon	Surgeon-Captain. This rank to be given after three years' service as Surgeon-Lieutenant	Captain
Surgeon	Surgeon-Lieutenant	Lieutenant

The recommendation made with regard to service is that a plan should be devised whereby medical officers of the Army should not be changed from one duty to another as fre-