

The mutual relations and the correspondence of these two remarkable men throw much light on the characters of both. No brief abstract can do justice.

After the death of Louis XV, Voltaire returned to Paris and was very anxious lest Tronchin should refuse to take charge of his health. He could not quite bring himself to follow Tronchin's good advice to return to Ferney and a quiet life. Tronchin took care of him in his last illness, and writes Bonnet of the unedifying end as follows: "Had my principles become slack and needed a firm bond, the man whom I have seen waste away, and whose death agony I have watched, would have furnished a very Gordian knot; and the contrast between the death of a good man, the close of a fine day, with that of Voltaire, is that between a beautiful day and a tempest, between the serenity of soul of the sage, who merely ceases to live, and the frightful torments of him for whom death is the King of Terrors."

In 1762 Tronchin declined the appointment of physician-in-chief to the Duke of Orleans, but three years later accepted, and betook himself permanently to Paris, making only infrequent visits to Geneva thereafter. He was lodged at the Palais Royal, provided with a cook and three lackeys, a carriage and two pair of fine black horses. He says that his purpose in changing his abode was to moderate his work and limit his enormous correspondence, for we must remember that he advised many patients only by letter on a statement of their physician, without seeing or examining them himself. This was more feasible at that day, when diagnosis rested on symptoms rather than on signs, and there were no instruments of precision. He was doubtless weary of the civic and religious strife then rampant in Geneva, from which he could not keep entirely clear.

Professional jealousy was again awakened in Paris on his return, though the surgeons welcomed him.

A prominent ecclesiastic who consulted him for intractable facial neuralgia submitted to double nerve section under his supervision with brilliant success.

He used suspension for the nine-year-old Duc de Chartres for a curvature of the spine, and inveighed against the heavy and brutal mechanical appliances of the time.

The Dauphin of France, son of Louis XV, and father of Louis XVI, died of consumption. Soon after it was found that his wife was also a victim of the disease, doubtless contracted from devotion to her sick husband. The king, much to the disgust of the court physicians, had Tronchin called in consultation January, 1767. As soon as he entered, struck by the foulness of the air, he exclaimed: "The princess is poisoned," and ordered the windows opened. It was the custom at Versailles to shut tight all windows Nov. 1 — All Saints' Day — and keep them so until Easter. This exclamation was twisted in meaning to imply an accusation that the Dauphiness, as gossip said had been the fate of her husband and of Mme.

de Pompadour, was being disposed of by the Duc de Choiseul, and won for Tronchin the undying and implacable hatred of that statesman. For this Tronchin bore no malice, and even publicly showed his esteem for the fallen Choiseul when he went into exile. Tronchin took full charge of the princess, giving her fresh air, feeding her generously, sending her out on foot and to drive. The fever subsided, and for a time she improved. But a copious hemoptysis occurred, and she failed and died March 13, 1767.

The faculty took advantage of the revolutionary treatment and every feature of the case to discredit Tronchin, but without success, save to cause him trouble. He retained the confidence of the king, and of his friends and patients.

To Dr. C. G. Cumston I owe a reference to Tronchin in Casanova's Memoirs. "I have been assured, though I have difficulty in believing, that he [Tronchin] cured a phthisical subject of a secret disease by means of the milk of an ass, which he had submitted to thirty massive mercurial frictions administered by four strong porters."³

In his last years he devoted two hours daily to poor patients, giving them the money to buy their remedies. He died at the Palais Royal as he had lived, with dignity and calm, large numbers of the poor following his bier to the grave.

It is impossible in a sketch like this to do justice to its subject. But I trust I may have succeeded in stimulating some of you to read his life in detail. He doubtless had faults—what of that? It profits not to seek or dwell upon them. It is uplifting as well as interesting to study the career of a high-principled, thoroughly trained physician, who, far in advance of most physicians of his time, followed the dictates of common sense in therapeutics, who worked with rather than combated nature, and to give him a tardy recognition which was accorded by the laity but denied him by the profession of his time. He made no discoveries, but rendered enormous service to a great number of people. His patients became his friends. His life was consistent throughout. He was one of the greatest practitioners of medicine the world has seen. This may be a strong statement, but I believe it to be true. We can all profit by his example, thanking God that we live at a time when all true physicians are humble followers and students of nature, when the impassioned advocates of theory and hypothesis have gone to their long rest and when Medicine is coming to her Kingdom.

AN UNUSUALLY EXTENSIVE MILK-BORNE OUTBREAK OF TYPHOID FEVER.

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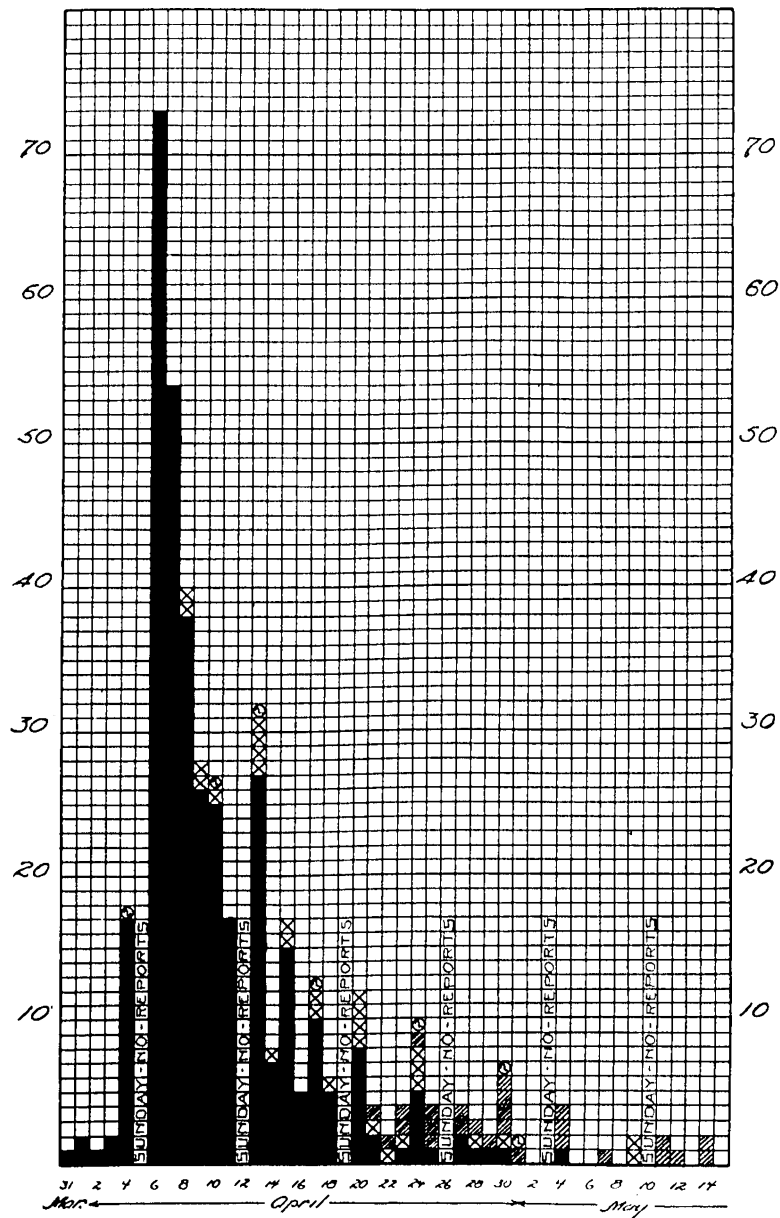
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ON March 31, 1908, after several months of practical freedom from typhoid fever, a case of that disease occurred in Jamaica Plain, followed,

³ Vol. iv, p. 455.

on April 1, by two more, on April 2 by one, and on April 3 by two. On April 4 inquiry was made as to the possibility of a common cause, and it was learned that many more cases were being reported. The number reported for that day

April 18, inclusive, the numbers reported were, respectively, 32 (Sunday and Monday), 7, 17, 5, 13 and 5. During the next week the numbers were, respectively, 12 (Sunday and Monday), 4, 2, 4, 10 and 4. Between Monday, April 27, and



■ Patient drank milk of F or Q	348
⊠ No history of use of milk of F or Q	29
▨ Secondary cases probably due to contact	26
◻ Milk supply may have included some from F or Q	7
	<u>410</u>

proved to be 17. On Monday, April 6, the number reported was 73 (which number includes the cases of two days, there being no mail delivery on Sunday), and during the next five days the numbers reported were, respectively, 54, 38, 26, 25 and 17. From Monday, April 13, to Saturday,

May 15 the total number of cases reported was 30, a majority of which (18) were undoubtedly contact cases. There were thus reported during this period of about six weeks no fewer than 410 cases of typhoid fever, in which total are not included the cases of two persons who came into

the district already ill, and a number which in the excitement naturally caused were wrongly diagnosed as typhoid.

So sudden an explosion, occurring in a district hitherto practically free from the disease, suggested before it had reached its height the probability of a common milk supply. It was learned on April 5 that 23 of the 24 cases already reported were on the routes of two milkmen. The 73 cases reported on April 6, the 54 reported on April 7, all but 6 of the rest of the cases reported during that week, and all but 12 of the cases reported during the second week were also on the same milk routes.

Of the 410 cases reported, 348 primary and 23 secondary cases proved to be in families supplied by these two men, who hereafter will be designated as F and Q. Since the number of cases occurring on each route was about the same (primary, 175 and 173; secondary, 6 and 17, respectively), and for reasons which will presently appear, the two supplies are presented as one in the accompanying chart, which illustrates the characteristically explosive nature of a milk-borne outbreak. There were 29 cases in which no history of the use of their milk could be obtained, and 7 in which there was a possibility that the victims had on some one or another day drunk it. These 36 persons were among the regular customers of no fewer than 15 different milkmen. More than half of them were adults who, going about freely and perhaps lunching and dining in restaurants and in the homes of their friends, may have consumed some of the same milk, or may have ingested the infection with some other article of food; and all but 3 of the remainder were children of school age, who also doubtless visited about to some extent.

Age periods. — The persons seized in this outbreak were distributed according to age as follows:

1 to 5 years,	77
6 " 10 "	75
11 " 15 "	49
16 " 20 "	42
21 " 25 "	44
26 " 30 "	34
31 " 35 "	24
36 " 40 "	25
41 " 45 "	15
46 " 50 "	9
Above 50 years,	13
Age not stated,	3
	410

Number of households invaded. — The 410 cases were distributed as follows:

Single cases in 216 households, divided as to milk supply as follows:

F,	97
Q,	86
All other milkmen,	33 (including 1 contact)
	216

In 79 households multiple cases occurred as follows:

		Total.	Contacts.
2 cases,	57 households,	114	12
3 " "	12 " "	36	7
4 " "	7 " "	28	5
5 " "	2 " "	10	1
6 " "	1 " "	6	
	79	194	25

Of the total number of contact cases (25), 23 occurred in households supplied by F and Q.

The milk supply of F and Q. — In common with eight other milkmen, Messrs. F and Q obtained their supply from the ear of a contractor, who derived this particular carload from eight towns, in none of which had a case of typhoid fever occurred during the previous three months, excepting that of an Italian laborer in no way connected with milk production. Each milkman who went to this car received milk from the same dairies regularly, and the fact that there was but one dairy whose product was given to both F and Q was naturally suggestive that the infective material came to Jamaica Plain from this particular dairy. Inquiry at the place of production revealed that not only was there no history there of any sickness whatever, but also the interesting fact that the owner was marketing about sixty cans a day, only forty of which were sent to Jamaica Plain, twenty being sold daily to a dealer in another place, where there had been but one case of typhoid fever, and that one not on his route. It was evident, therefore, that the infection did not come from the premises of this producer.

Among the first victims of the disease to be reported was the milkman F himself (April 4). It appears that on or about March 20, F consulted his family physician, who concluded that F was merely tired and overworked. From that time until April 2 F felt ill, but was able to attend to his daily work, which included the general handling of his milk. On April 1 he consulted his physician again, and at that time his temperature was 100°, and he was suffering with diarrhea. On April 2 a diagnosis of typhoid fever was made, and he took to his bed. On April 10 he died, and the autopsy performed by Dr. George B. Magrath revealed, among other lesions, an ulcer, 1.5 by 2 cm., at a point about 60 cm. below the ileocecal valve, which ulcer, being of not less than three weeks' development, indicates that F must have been suffering from typhoid fever as early as March 20. Other lesions observed in the intestines, numerous ulcers of varying size, were of more recent origin, and represented, according to Dr. Magrath, the conditions found toward the end of the second week.

Considering that F had been ailing for a period of about two weeks before he took to his bed, but not to such an extent as to prevent him from handling the milk, it is not difficult to surmise in what manner the supply became contaminated with the exciting cause of the disease, for the hands of the average milkman do not receive the same degree of care as those of an operating surgeon, and with more or less frequent occasion for interrupting the work of handling the milk

in order to respond to natural calls, specific contamination, first of the fingers and then of the milk, is very likely to occur. With the supply of Q, however, the connection is by no means clear. It was reported that Q received from the dairy which they had in common only those cans which F left for him after tasting all and selecting those which he wished for his own trade. This, however, is denied on apparently good authority, and, instead, it is said that on only two occasions, namely, March 15 and March 18, did F precede Q at the ear. It is further stated that although each can was tasted before acceptance, those that were rejected were set aside and were not delivered to Q. However this may be, and whether or not F had an opportunity to infect the milk of Q on either of these two days or on those subsequent days, it is certain that there was the greatest possibility of an interchange of cans between F and Q, for it was the custom of each to return the cans to the ear washed, but by no means sterilized; and after they were filled at the dairy and returned, Q was as likely as F to receive cans which had been supplied to and handled and returned by F. Certain it is that the first infection did not occur at the place of production and was not due to the fault of the farmer; and equally certain is it that F, during two weeks of ambulant typhoid fever, had ample opportunity to infect his supply and to reinfect it again and again, and to spread the infection to Q's supply through the non-sterilized cans of the contractor which they used in common.

A GLOMERULAR LESION OF EXPERIMENTAL NEPHRITIS.*

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DURING the past few years experimental nephritis has been extensively studied,¹ and the lesions produced by a variety of substances have been investigated histologically. Uranium nitrate has been the substance which has proved most useful in these experimental studies, since, as pointed out by Richter,² it produces renal lesions which simulate human nephritis much more closely than do those produced by the other toxic substances, in that edema is a common accompaniment of the uranium nitrate lesions.

Schlayer, Hedinger³ and Takayasu,⁴ have investigated in rabbits the functional relations of the kidneys to stimuli of various kinds and have compared the reactions obtained in normal animals

with those in animals whose kidneys have been damaged by doses of various toxic substances. Histological examinations of the kidneys have been made, and in particular the glomeruli have been studied by Takayasu,⁵ since it had early been thought that there was a close relation between glomerular lesions, albuminuria and edema. Takayasu failed to find any very marked glomerular lesions in that group of nephritides which Schlayer and Hedinger had termed tubular nephritis, and which they had produced by potassium bichromate, mercuric chloride and uranium nitrate. Though lesions were found in the glomeruli, these were not of marked degree and were inconstant in their relations to the degree of injury, as shown by the urinary excretion and the functional reactions of the kidney. In contrast to these, rather more marked lesions were found in the group of vascular nephritides, those produced by cantharidin, arsenic and diphtheria toxin. In the latter group Takayasu made out an increase in the thickness of the capillary wall and in the size of the nuclei of the glomerulus, which gave the appearance of a swollen, cellular, glomerular tuft. Associated with these changes were other minor lesions.

In connection with the study of some experimental renal lesions during the past winter, I have observed the following glomerular lesion which seems worthy of description, since it appears to have been overlooked by Takayasu and other investigators of the lesions of experimental nephritis. The lesion consists of the appearance in the glomerular tuft of small, round or oval, rarely irregular, homogeneous droplets, varying from a half to four microns in diameter. (Figs. 1 and 2.) These droplets appear in the wall of the capillaries making up the glomerular tuft, and do not occur either in the lumen of the capillaries or in the space between the glomerular tuft and the capsule of the glomerulus (Fig. 3) except in rare instances, when their position might be explained as an artifact in preparation. They were not found in the epithelium lining Bowman's capsule. In some glomeruli only a few scattered droplets occur, while in others they are very numerous. Very often in a glomerulus they tend to occur in groups of three to six or eight, and where the larger groups are found, almost always some of the droplets are considerably coarser than others of the same group. In some rabbits almost every glomerulus contains many droplets of fairly large size; in others the droplets are uniformly smaller. In some rabbits some glomeruli contain numerous droplets while adjacent glomeruli are free from them. This focal distribution seemed to have no relation to the other lesions of the kidney, and no cause for it was to be made out. In kidneys showing slight degrees of the lesion only here and there a glomerulus showed a few fine droplets. In a series of twenty-six successive rabbits studied in this connection, these droplets were found in the glomeruli of thirteen animals. Thirteen of this group of ani-

* This lesion of experimental nephritis was demonstrated at the meeting of the Association of American Physicians, held in Washington, D. C., May 12 and 13, 1908.

¹ For a review of recent literature on this subject see Christian: *Experimental Nephritis*. BOSTON MED. AND SURG. JOUR., 1908, clviii, 416, 452.

² Richter: Die experiment. Erzeugung von Hydrops bei Nephritis. Beiträge zur klin. Med., Festschrift Herrn Prof. Senator, Berlin, 1904, 283.

³ Schlayer und Hedinger: Experiment. Studien über toxische Nephritis. Deut. Arch. für klin. Med., 1907, xc, 1.

⁴ Schlayer, Hedinger und Takayasu: Ueber nephritisches. Oedem. Deut. Arch. für klin. Med., 1907, xci, 59.

⁵ Takayasu: Ueber die Beziehungen zwischen anatomisch. Glomeruli-veränderungen und Nierenfunktion bei experiment. Nephritiden. Deut. Arch. für klin. Med., 1907, xci, 127.