vomiting and diarrhea, or cases of stricture of the esophagus and stomach, &c., often terminate by starvation. The patient gets weaker. There is languor, a feeble circulation, and coldness of the extremities. The hands, feet, nose, and ears get dusky. The breathing gets more and more shallow. The pulse at last becomes almost imperceptible, and any attempt to sit up or move produces faintness. Such symptoms are common to all chronic diseases in which there is slow wasting away.

In fevers generally, the typhoid state is the commonest mode of

termination.

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In diseases of the nervous system, the chronic spinal affections either terminate ultimately in extension to the vital parts, or by some intercurrent affection. In brain disease, the termination of acute cases is generally by coma, and often by convulsions. The patient becomes gradually unconscious, in many cases; the breathing becomes irregular and stertorous; secretions accumulate in the

bronchial tubes; and death appears to end by asphyxia.

In simple senile decay—beyond the obvious appearances of gradual failure—it is often impossible to detect any physical sign which would indicate that death was near at hand. There is often mild delirium; and in many cases there is wild and noisy excitement for a few days before the unconsciousness which supervenes and ushers in the fatal termination. Many cases, certainly, run a course similar to the chronic wasting diseases already described; but others, again, when much debilitated, seem to die of sudden failure of the nervous apparatus of the heart. The previous visit may not have enabled the physician to detect any change in the circulatory organs.

CHAPTER XVI.

POST-MORTEM EXAMINATION.

(Summarised, by permission, from Woodhead's Practical Pathology.)

In some cases it is advisable to get a history of the case, and especially when the death has been a suspicious one, or due to some accident, &c. Note the time the patient died, and the interval between the death and examination. Note the colour of the various parts of the body; the post-mortem lividity; the appearances of wounds, abrasions, &c.; and the degree of post-mortem rigidity. In systematic examinations, the post-morten case-book-containing important headings, as name, age, height, &c.—should be followed.

Head. - After the external examination, an incision is made behind the ear and carried over the vertex of the skull to the same point on the other side. The scalp is then dissected and reflected forwards and backwards until the eminences over the frontal sinuses and the occipital protuberances are exposed. After examination of the soft parts, carry the knife round the skull at the level above indicated. The saw is then used carefully, and the skull-cap loosened by the aid of the chisel, mallet, and lever. The skull-cap can generally be removed by dragging on the fore part; but sometimes the adhesions render a good deal of force necessary. A small opening is made in the dura-mater on each side, just above the bony margin, and a blunt-pointed bistoury is introduced, and the incision carried round to the mesial line on each side, backwards and forwards; then cut through the attachment of the membranes to the crista galli, and draw them back. After examination of the inner surface of the membranes, remove the brain. Introduce the fingers of the left hand beneath the frontal lobes, and gently tilt the brain backwards, severing in the following order, the olfactory bulbs; optic nerves; internal carotid vessels; third, fourth, and sixth pairs of nervesthe latter being divided along with the tentorium. The fifth and seventh pairs are then divided, and the incision carried along the margin of the tentorium, dividing that membrane from the petrous portion of the temporal bone. Cut through the eighth and ninth nerves, and then cut through the cord as low down as possible, and tilt the brain out carefully. Examine the inner surface of the duramater at the base of the skull. The dura-mater may afterwards be detached and the bones examined—especially the petrous portion of

the temporal bone.

The Brain.—" With a long thin narrow-bladed knife cut horizontally from within outwards into the hemisphere, just above the level of the corpus callosum, leaving the upper part of the brain attached to the lower by the pia mater only, at its outer margin; make a similar incision into the opposite hemisphere." Examine the lateral ventricles and their contained fluid, by cutting vertically down into the corpus callosum, at a distance of one-sixteenth of an inch from the mesial plane. The depth is only about one-eighth of an inch. Extend the incision backwards and forwards, to expose the ventricle, and note the quantity of fluid which escapes. Then divide and subdivide the upper portions of the cerebral hemispheres already turned outwards-cutting from within outwards, and never completely separating the lamellæ. To open into the anterior horn of the ventricle, cut horizontally into the frontal lobe a little below the level of the body of the cavity, removing the brain substance above the incision. The posterior horn is opened in a similar way. Separate the pons, medulla, and cerebellum from the large brain, "by cutting towards the mesial line in a plane, the anterior border of which is just in front of the pons, the other border lying immediately behind the posterior pair of the corpora quadrigemina; a similar incision is made from the opposite side." "Having determined the contents of the lateral ventricles, the state of their walls and venous plexus, and the condition of the septum, the latter is taken hold of with the left hand, close behind the foramen of Monro, the knife is 330

pushed in front of the fingers through this aperture, and the corpus callosum cut through obliquely upwards and forwards, and then all these parts (corpus callosum, septum lucidum, and fornix) are carefully detached from the velum interpositum and its choroid plexus. After these two latter have been exposed, we have to examine the state of their vessels and tissue. Then the handle of the scalpel is passed from the front under the velum, which is thus detached from the pineal body and corpora quadrigemina, the state of these parts is determined, and the third ventricle now exposed" (Virchow). A vertical incision through the corpora quadrigemina opens into the aqueduct of Sylvius. The corpora striata and optic thalami are examined by numerous incisions. Next cut through the peduncles of the cerebellum and make free incisions into this organ, and treat the pons, medulla, and upper part of the cord in a similar manner.

The removal of the spinal cord is generally deferred to a later stage of the post-mortem examination, but may be conveniently here described. Divide the skin over the spinous processes and remove the muscles to the side. A chisel or saw and bone-pliers may be used to divide the vertebral arches, and remove them with the spinous processes. When the dura-mater has been exposed and examined, slit it open longitudinally, and test the consistence of the cord by gently passing the finger over it. Divide the roots of the nerves, and dissect the cord out carefully from below upwards. Numerous transverse incisions are made in the cord, unless it be desired to preserve it for future microscopical examination, when it is better to cut the cord into four equal parts, and suspend them in a bottle containing a 4 per cent. solution of bichromate of ammonium (Bramwell). The preservative fluid should be changed on the second, and again on the sixth day; and the preparation kept in a

The Thorax and Abdomen. - An incision is made from the sternal notch-or from the symphisis of the chin, if the larynx is to be examined-to the symphisis pubis. At the ensiform cartilage dissect carefully down to the peritoneum, and then introducing the fingers, raise the abdominal tissues from the subjacent organs, and open into the abdominal cavity. The tissues are dissected back over the chest and the cartilages cut through, beginning with the second, and always holding the knife so that in cutting through it falls upon the next cartilage without injuring the organs beneath. When the lower cartilages are cut, pass the knife horizontally under the breastplate, and cut round by the edge to the ensiform cartilage and to the other side, then raise the breast-plate and either crack through the upper part of the sternum or divide the first rib and disarticulate the clavicles. The breast-plate being removed, examine the pericardium, pleura, and abdominal organs. Note their relations, and observe if there be adhesions, fluid, inflammation, or perforations, &c. Next open into the pleural and pericardial sacs, and note the presence and amount of fluid, &c. (if any). The heart is now rotated so that the right border may come to the front, and an incision is made into the right ventricle, commencing at the base, and another into the right auricle. Remove and estimate the amount of blood from the right auricle and ventricle, and examine with the fingers the state of the tricuspid valve. The left auricle and ventricle are similarly examined. Then remove the heart by dividing the aorta and pulmonary vessels. After clearing out the clots, test the competency of the aortic and pulmonary valves by means of a stream of water. To complete the examination slit up the heart with a pair of scissors, first the right ventricle into the pulmonary artery; and, second, the left ventricle into the aorta. The right auricle is slit open from the inferior to the superior vena cava, and the left auricle opened by an incision between the openings of the pulmonary veins. The coronary vessels should be slit open and examined.

The lungs-after careful examination in situ, the hand being passed into the pleural cavity and the lung cleared from adhesions (if present)—are removed, by cutting from above downwards through the vessels and bronchi, and pulmonary ligaments. On removal, make a long free incision from apex to base, commencing at the outer edge and cutting to the root of the lung-leaving the two halves attached. Examine the cut surfaces, and try the specific gravity of consolidated pieces. Slit open some branches of the bronchus and pulmonary artery.

When necessary, the larynx, œsophagus, pharynx, tongue, and

soft palate may be removed en masse.

The abdominal organs may now be examined. The omentum is first removed, and then the spleen. Make a free incision through the latter, in its thickest and longest part, and apply the iodine test. Remove the left, and then the right, kidney and supra-renal capsules. To do this, make "a vertical incision through the peritoneum external to and behind the ascending or descending colon; the intestine is to be pushed aside, and the kidney detached from its connections, by a single cut near the hilus." An incision is made through the kidney from the outer edge to the pelvis. The relative thickness of the medulla and cortex is normally about 3:1. Strip off the capsule, and note if adherent. Apply the iodine test after examining the cut surfaces minutely. Examine the supra-renal capsules and semilunar ganglia. The bladder should be opened in situ, and carefully explored-along with the urethra, prostate, &c., in special cases. In the female the uterus and appendages should be removed and examined. The rectum may be cut, ligatured, and removed, if required. The duodenum and stomach should now be examined for adhesions, perforations, &c., and then opened in situ, by an incision running along the anterior surface of the duodenum and greater curvature of the stomach. In cases of poisoning, the stomach is removed as early as possible, after applying double ligatures around the esophagus and lower part of the duodenum. Empty the contents of the stomach into a clean bottle. Examine the stomach and duodenum. Examine the vena cava and bile ducts. Remove now the liver. Cut through the arch of the diaphragm along the left border of the liver; pull the organ forward and cut through the falciform ligament and the remaining attachments to the diaphragm, posteriorly. Slit open the gall-bladder and examine. Make numerous sections through the liver and note the consistence, &c., and apply the iodine test. Examine the pancreas. The mesentery and intestines are examined first in situ; then cut through the mesentery at its attachment to the bowel—the two extremities of the intestine having previously been tied. The intestine being removed, a stream of water is passed through it, and then it is slit up with a pair of scissors from beginning to end, and the mucous surfaces examined; apply the iodine solution. Lastly, examine the retro-peritoneal glands, thoracic duct, aorta, vena cava, &c.

Average Weights of Organs.

Table used in the Post-mortem Room of the Royal Infirmary, Edinburgh.

			Ma	ile.	Female.		
Human	Brain, . Heart, . Lungs, . Liver, . Pancreas, Spleen, .		lbs. 3 2 3	oz. 1½ 11 13 5	lbs. 2 2 2	oz. 1½ 9 12 2¾ 5½	
			Right.	Left.	Right.	Left.	
.,	Kidneys,		oz. 54	oz. $5\frac{1}{2}$	oz. 4 ³ / ₄	oz.	

CHAPTER XVII.

PRESCRIBING.

This art is generally taught in the practical classes of *Materia Medica*, and it is fully discussed in smaller works to which the reader is referred. Paris' *Pharmacologia*, and *Pareira* will probably be read by all students. It is not the intention of the author of this work to enter fully into the subject; but the question of incompatibility, which faces the student whenever he attempts—as he ought—to compose a *magistral formula*, is so complex and bewildering, that a few rules have been made with a view to lighten the difficulty.

It is a great mistake for the student ever to attempt to commit to memory the long list of incompatibles generally given in the text books. Were he to attempt the list given in Paris' Pharmacologia, he would have a task, indeed! A few of these must be known, but "how not to do it" simply increases the embarrassment of the young prescriber. He may know that a soluble salt of lead to which sulphuric acid is added, will produce an insoluble sulphate of lead, and the knowledge acquired in this way will be useful; but to tell him a few hundred decompositions of this sort will not, at the outset, tend to give him confidence. Mistakes happen most frequently with the compound substances, owing to the student forgetting the minor constituents-e.g., carbonate of ammonia should not be prescribed with the syrup of squills, as there is an acid used in its preparation, and which is present in small quantity in the syrup. The result would be effervescence. The student is advised to use at first only the formulæ given by his professors and teachers, and to allow the information necessary for good prescribing, to come in the course of his studies in practice. The following rules have been formulated, with the hope that the wide field which they cover, will be of some assistance to anxious beginners. They only apply to salts, &c., used in medicine, and to solutions such as are commonly in use. Prescribe as simply as possible. Avoid polypharmacy.

I.—Soluble salts with the same acid or basic radicals, may be prescribed in the same mixture—e.g.—

Magnesii Sulphas, with Ferri Sulphas; Ferri Sulphas, with Ferri Acetas, &c.

II.—Dilute Acids may be added to mixtures containing a salt, if the same acid be present in the salt; and the solubility is increased thereby—e.g.—

Plumbi Acetas, with Acidum Aceticum Dilutum. Magnesii Sulphas, with Acidum Sulphuricum Dilutum.

III.—Salts of potassium, sodium, and ammonium, may be prescribed together; or with any soluble nitrate, chlorate, or acetate; or with any soluble bromide, chloride, or iodide, used in medicine (see & 60).

(Note.—The sulphate and acid tartrate of potassium are not very soluble.)

IV.—All soluble sulphates, hyposulphites, nitrates, chlorates, and acetates, and bromides, chlorides, and iodides, used medicinally, may be prescribed in the same mixture, provided the constituent parts do not produce the following insoluble salts, viz.—Sulphates of mercurosum, lead, or antimony; and the chlorides, bromides, and iodides of mercurosum, lead, silver, bismuth, or antimony.

(Note.—All sulphides, phosphates, arseniates, arsenites, borates, oxalates, carbonates, sulphites, tartrates and citrates are insoluble, except the alkaline salts (K, Na, Am.), and the tartrates of alumina, ferricum, and copper; and the citrates of alumina, magnesia, iron, and copper.)

mixture cloudy, need not be so suspended.

or chiretta, as these do not contain tannin.

creasing the solubility of the mercuric salt.

and copaiba also require mucilage.

1. B. - Liquoris Arsenici Hydrochlorici. .

3. R.—Quininæ Sulphatis,

Ferri Redacti, Pulveris Digitalis,.

Extracti Gentianæ,

Fiat pilula, mitte tales, .

precipitate resins.

V .- Soluble salts, with different acid and basic radicals-not belonging to the previous groups-can only be prescribed together, when actually known that they do not decompose. VI.-Mixtures containing strong tinctures when prescribed with water, require the addition of mucilage, to suspend the resinous matter. Weak tinctures, although they render the

VII.—Alkalies may be prescribed with solutions containing resinous matter, and they render them more soluble; but acids

VIII.—Essential and aromatic oils should have some spirit or syrup in the mixture; or mucilage must be used. Fixed oils

IX.—Iron may be prescribed with infusions of quassia, calumba,

X.—The perchloride of mercury may be prescribed with iodide of potassium, and also with ammonium chloride-the latter in-

For a short list of common incompatibles, see Griffith's Lessons on Prescriptions and Prescribing, or Elborne's Pharmacy and Materia

PRESCRIPTIONS.

	PRESC	CRIPI	TION	S.				335
4-	Signetur.—A tabl (duri pulm	e et So	lve.	wat	er eve	ery fo	our	Jiss. Jiss. Jij. Jiss. with
5.	R.—Pilulæ Hydrargyri, Pulveris Digitalis, Pulveris Scillæ, Extracti Gentianæ, Fiat pilula, mitte tales Signetur.—One pi	Misce	<i>ice</i> da	ily, a	fter m	eals.		xxx.
6.	R.—Liquoris Morphinæ H Spiriti Etheris Sulphu Signetur.—A teas	ydroch rici, <i>Misce</i> poonfu iac dys	l in w	ater,	; when	· requi		3ss. 3iss. For
7.	Signetur.—A tabl	· l ·	Solve.	wate	r, thri	ce da	gr ily.	Used
	The state of the s		-					

DDECCDIDTIONS

-	Diductio Lincollor				3 66			7
	Tincturæ Ferri P	erchlorid	1, .			•		3iv.
	Infusum Calumba	e (vel Qu	iassiæ) a	ad		•		ξvj.
		M	isce.					
	Signetur.—A	desserts	poonful	in w	ater.	thrice	daily	after
	•	meals.	Cardia	c toni	ic. A	næm	ia.	
		ST OF THE	The section					
2. R	-Quininæ Sulphat	is, .					gr.	xlviij.
	Acidi Sulphurici	Diluti,						ξvj.
	Aquam ad .		464		100			δvj.
		S	olve.					
	Signetur.—A	dessert	spoonfu	l in	water	. thri	ce dai	ly, be-
		fore me						

Misce.

tonic.

Signetur.—One pill, thrice daily, after meals. Cardiac

Signetur. – A	table meals	spo	onful 1 Used in	n wa	icardi	hrice tis.	Toni	, after c, &c.
9. R.—Plumbi Acetatis,							· g	r. xxiv.
Acidi Acetici Dili	uti,							q. s.
Aquam ad .	•	Sol			•		10	δvj.
Signetur.—A	For h	poc	nful in optysis	wate (An	r ever	y four	or six	hours.

8. R.—Tincturæ Ferri Perchloridi, .

Infusum Calumbæ (vel Quassiæ) ad

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10. R.—Morphinæ Hydrochloratis,	14 R.—Vini Ipecacuanhæ,
Solve.	Or
every four hours. For a rheumatic cold. 12. B.—Vini Ipecacuanhæ,	15. R.—Ammonii Carbonatis,
13. R.—Glycerini Acidi Tannici,	Or 16. B.—Acidi Hydrocyanici Diluti,
R.—Zinci Chloridi,	Misce. Signetur.—Shake the bottle well, and give a teaspoonful in water, every four hours, if necessary. For whooping-cough.
B.—Argenti Nitratis,	Or
R.—Iodi, gr. vj. Potassii Iodidi, gr. xij. Olei Menthæ Piperitæ, m. 5. Glycerini ad Misce. Signetur.—"Iodised Glycerine." For painting the larynx (M'Bride).	17. B.—Chloral Hydratis,

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18. R.—Ammonii Carbonatis,	25. R.—(Niemeyer's pill). Quininæ Sulphatis,
19. R.—Ammonii Carbonatis,	26. R.—Liquoris Morphinæ Hydrochloratis,
20. B.—Ammonii Carbonatis,	Very useful for hæmoptysis. 27. R.—Atropinæ Sulphatis, gr. i. Aquæ Destillatæ,
21. R.—Acidi Nitrohydrochlorici Diluti,	Signetur.—Poison. For hypodermic injection in the sweating of phthisis. One to four minims at bedtime. Or
spoonful) in water, thrice daily, after meals. Signetur.—A teaspoonful in water, thrice daily, after meals. Iron tonic during convalescent states, &c.	R.—Morphinæ Hydrochloratis,
Or 23. R.—Liquoris Arsenici Hydrochlorici, Syrupi Ferri Phosphatis Compositi (Chemical food) ad 3vj. Misce. Shake the bottle.	28.—" Copper pill," see & 52.
Signetur.—(Same as R. 22). Shake the bottle. 24. Ik.—(Begbie's Mixture). m. 36. Acidi Hydrocyanici Diluti, 55s. Glycerini, 58s. Infusum Quassiæ ad 75ij. Misce. Signetur.—A tablespoonful in water, thrice daily, before meals. For phthisical cough. Stomachic sedative.	28a. B.—Ammonii Carbonatis,

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340 29. R.—Potassii Iodidi,	34. R.—Extracti Pancreatis (Zymine),
31. R.—Potassii Acetatis,	meals, in water. 36. B.—Tincturæ Nucis Vomicæ,
32. B.—Acidi Carbolici,	37. R.—Quininæ et Ferri Citratis,

Signetur. - A dessertspoonful, or tablespoonful (as

forms of dyspepsia. Tonic.

directed), thrice daily, in water, before meals. Much used in hepatic, and other

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Or	
44 Pr.—Acidi Nitrici Diluti,	Zij. Ziss. Zvj. Zvj.
Signetur.—A tablespoonful in water, thrice daily meals	, before
45. B.—Pilulæ Hydrargyri, Pilulæ Rhei Compositæ, Misce. Fiat pilula, mitte tales sex.	gr. i. gr. iv.
Signetur.—One pill every night, or on alternate as directed. For hepatic dyspepsion——	nights, a, &c.
Extracti Nucis Vomicæ, Extracti Hyoscyami, Extracti Aloes Socotrinæ,	
Fiat pilula, mitte tales,	
Extracti Colocynthidis Compositi, Extracti Belladonne, Misce.	gr. ½. gr. iij. gr. ½.
Fiat pilula, mitte tales sex. Signetur.—One or two pills at night, as direct constipation.	ed. For
48. R.—Bismuthi Subnitratis, Tincturæ Opii, Tincturæ Catechu (vel Kino), Misturæ Cretæ ad	gr. cxx. Jiss. Ji. Svj.
Signetur.—Shake the bottle well, and take spoonful in water every three hours, as directed. For diarrhoe (Sedative mixtures, as R 41, may also be prescribed opium may be omitted, if necessary, in the above R 48.)	a.

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49. R.—Bismuthi Subnitratis,	54. R.—Exalgine,
necessary. For diarrhea in children. 50. B.—Bismuthi Subnitratis, gr. ij. Sodii Bicarbonatis, gr. ij. Hydrargyri cum Cretâ, gr. i. Pulveris Zingiberis, gr. i. Misce.	55. B.—Ammonii Carbonatis,
Fiat pulvis, mitte tales, xij. Signetur. — One powder thrice daily. Used for catarrhal diarrhœa in children.	56. R.—(Blaud's pills). Ferri Sulphatis, Potassii Ĉarbonatis, āā gr. iiss. Tragacanthæ, q. s. Misce.
51. B.—Tincturæ Opii,	Fiat pilula, mitte tales,
52. B.—Cupri Sulphatis, Extracti Opii, āā, gr. ½. Pulveris Ipecacuanhæ,	57. R.—Magnesii Sulphatis,
53. B.—Fellis Bovini Purificati, gr. ij. Extracti Taraxaci, gr. ij. Misce. Fiat pilula, secundum artem, mitte tales,	58. R.—Tincturæ Colchici Seminum,

PRESCRIPTIO	ON.	S.
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Or R.—Extracti Colchici Acetici, gr. i. Pulveris Ipecacuanhæ Compositi, gr. ii. Extracti Colocynthidis Compositi, gr. iii. Extracti Gentianæ, q. s. Misce. Fiat pilula, mitte tales, Signetur.—One pill at bed time. Used in gout.	64. R.—Acidi Carbolici,
59. R.—Atropinæ, gr. i. Morphinæ Hydrochloratis, gr. viij. Aquæ, Misce. Signetur.—Poison. For external application on lint. Used in gout.	65. R.—Acidi Carbolici, gr. viij. Bismuthi Subnitratis,
60. R.—Sodii Salicylatis,	Preparations used in Eezema. (From Dr. Allan Jamieson). Oscar Lassar's paste. 66. R.—Acidi Salicylici,
61. B.—Hydrargyri cum Cretâ,	Hile's paste. R.—Resorcini, gr. x.—xl. Lanolini, Vaselini, Zinci Oxidi, Pulveris Amyli, āā,
62. R.—Potassii Iodidi, gr. lx. Liquoris Hydrargyri Perchloridi, 3iss. Decoctum Sarsæ ad 3vj. Misce et Solve. Signetur.—A tablespoonful in water, thrice daily, between meals. Much used in syphilis. 63. (Catarrhal mixture for measles see R 14).	Unna's glycerine jelly. R.—Gelatinæ,