ΠΕΡΙ ΑΡΘΡΩΝ[1]

I. Ὤμου δὲ ἄρθρον ἕνα τρόπον οἶδα ὀλίσθανον, τὸν ἐς τὴν μασχάλην· ἄνω δὲ οὐδέποτε εἶδον, οὐδὲ ἐς τὸ ἔξω· οὐ μέντοι διϊσχυριείω ἔγωγε[2] εἰ ὀλισθάνοι ἂν ἢ οὔ, καίπερ ἔχων περὶ αὐτοῦ ὅ τι λέγω. ἀτὰρ οὐδὲ ἐς τὸ ἔμπροσθεν οὐδέπω ὄπωπα ὅ τι ἔδοξέ μοι ὠλισθηκέναι· τοῖσι μέντοι ἰητροῖσι δοκεῖ κάρτα ἐς τοὔμπροσθεν ὀλισθάνειν, καὶ μάλιστα ἐξαπατῶνται ἐν τούτοισιν, ὧν ἂν φθίσις καταλάβῃ τὰς σάρκας τὰς περὶ τὸ ἄρθρον τε καὶ τὸν βραχίονα· φαίνεται γὰρ ἐν τοῖσι τοιούτοισι παντάπασι ἡ κεφαλὴ τοῦ βραχίονος ἐξέχουσα ἐς τοὔμπροσθεν. καὶ ἔγωγέ ποτε τὸ τοιοῦτον οὐ φὰς ἐκπεπτωκέναι ἤκουσα φλαύρως ἀπὸ[3] τῶν ἰητρῶν, ὑπό τε τῶν δημοτέων διὰ τοῦτο τὸ πρῆγμα· ἐδόκεον γὰρ αὐτοῖσιν ἠγνοηκέναι μοῦνος, οἱ δὲ ἄλλοι ἐγνωκέναι, καὶ οὐκ ἠδυνάμην αὐτοὺς ἀναγνῶσαι, εἰ μὴ μόλις,[4] ὅτι τόδ' ἐστὶ τοιόνδε· εἴ τις τοῦ βραχίονος ψιλώσειε μὲν τῶν σαρκῶν τὴν ἐπωμίδα, ψιλώσειε δὲ ᾗ ὁ μῦς ἀνατείνει, ψιλώσειε δὲ τὸν τένοντα τὸν κατὰ τὴν μασχάλην τε καὶ τὴν κληῖδα πρὸς τὸ στῆθος ἔχοντα, φαίνοιτο ἂν ἡ κεφαλὴ τοῦ βραχίονος ἐς τοὔμπροσθεν ἐξέχουσα ἰσχυρῶς, καίπερ οὐκ ἐκπεπτωκυῖα· πέφυκε γὰρ ἐς τοὔμπροσθεν προπετὴς ἡ κεφαλὴ τοῦ βραχίονος· τὸ δ' ἄλλο ὀστέον τοῦ

[1] So Apollonius, Galen and most MSS. B M and Kw. add ΕΜΒΟΛΗΣ.

ON JOINTS

I. As to the shoulder-joint, I know only one dislocation, that into the armpit. I have never observed either the upward or outward form, but do not wish for my part to be positive as to whether such dislocations occur or not, though I can say something on the subject. Nor have I ever seen anything that seemed to me a dislocation forwards. Practitioners, indeed, think forward dislocation often happens, and they are especially deceived in cases where there is wasting of the flesh about the joint and arm, for in all such the head of the humerus has an obvious projection forwards. In such a case I myself once got into disrepute both with practitioners and the public by denying that this appearance was a dislocation. I seemed to them the only person ignorant of what the others recognised, and found it hardly possible to make them understand that the case was as follows:— Suppose one laid bare the point of the shoulder of the fleshy parts from the arm, and also denuded it at the part where the muscle[1] is attached, and laid bare the tendon stretching along the armpit and collar-bone to the chest, the head of the humerus would be seen to have a strongly marked projection forwards, though not dislocated. For the head of the humerus is naturally inclined forwards,

[1] Deltoid.

[2] Kw. omits ἔγω. [3] ὑπό τε Pq. [4] μόγις.

βραχιονος ἐς τὸ ἔξω καμπύλον. ὁμιλεῖ δὲ ὁ βραχίων τῷ κοίλῳ τῆς ὠμοπλάτης πλάγιος, ὅταν παρὰ τὰς πλευρὰς παρατεταμένος ᾖ. ὅταν μέντοι ἐς τοὔμπροσθεν ἐκτανυσθῇ ἡ σύμπασα χείρ, τότε ἡ κεφαλὴ τοῦ βραχίονος κατὰ τὴν ἴξιν τῆς ὠμοπλάτης τῷ κοίλῳ γίνεται καὶ οὐκ ἔτι ἐξέχειν ἐς τοὔμπροσθεν φαίνεται. περὶ οὖ οὖν ὁ λόγος, οὐδέποτε εἶδον οὐδὲ ἐς τοὔμπροσθεν ἐκπεσόν· οὐ μὴν ἰσχυριείω γε οὐδὲ περὶ τούτου, εἰ μὴ ἐκπέσοι ἂν οὕτως ἢ οὔ· ὅταν οὖν ἐκπέσῃ ὁ βραχίων ἐς τὴν μασχάλην, ἅτε πολλοῖσι ἐκπίπτοντος, πολλοὶ ἐπίστανται ἐμβάλλειν· εὐπαίδευτον δέ ἐστι τὸ εἰδέναι πάντας τοὺς τρόπους, οἷσιν οἱ ἰητροὶ ἐμβάλλουσι, καὶ ὡς ἄν τις αὐτοῖσι τοῖσι τρόποισι τούτοισι κάλλιστα ἂν χρέοιτο·[1] χρῆσθαι δὲ χρὴ τῷ κρατίστῳ τῶν τρόπων, ἢν τὴν ἰσχυροτάτην ἀνάγκην ὁρᾷς· κράτιστος δὲ ὁ ὕστατος γεγραψό-
43 μενος.

II. Ὁκόσοισι μὲν οὖν πυκινὰ[2] ἐκπίπτει ὁ ὦμος, ἱκανοὶ ὡς ἐπὶ τὸ πλεῖστον[3] αὐτοὶ σφίσιν αὐτοῖσιν ἐμβάλλειν εἰσίν· ἐνθέντες γὰρ τῆς ἑτέρης χειρὸς τοὺς κονδύλους ἐς τὴν μασχάλην ἀναγκάζουσιν ἄνω τὸ ἄρθρον, τὸν δὲ ἀγκῶνα παράγουσι παρὰ τὸ στῆθος. τὸν αὐτὸν δὲ τρόπον τοῦτον καὶ ὁ ἰητρὸς ἂν ἐμβάλλοι, εἰ αὐτὸς μὲν ὑπὸ τὴν μασχάλην ἐσωτέρω τοῦ ἄρθρου τοῦ ἐκπεπτωκότος ὑποτείνας τοὺς δακτύλους ἀπαναγκάζοι ἀπὸ τῶν πλευρέων ἐμβάλλων τὴν ἑωυτοῦ κεφαλὴν ἐς τὸ ἀκρώμιον ἀντερείσιος ἕνεκα, τοῖσι δὲ γούνασι παρὰ τὸν ἀγκῶνα ἐς τὸν βραχίονα ἐμβάλλων, ἀντωθέοι πρὸς τὰς πλευράς—συμφέρει δὲ καρτερὰς τὰς χεῖρας ἔχειν τὸν ἐμβάλλοντα—ἢ εἰ

while the rest of the bone is curved outwards. The humerus, when extended along the ribs, meets the cavity of the shoulder-blade obliquely, but when the whole arm is extended to the front, then the head of the humerus comes in line with the cavity of the shoulder-blade, and no longer appears to project forwards. To return to our subject, I never saw a dislocation forwards, but do not want to be positive about this either, whether such dislocation occurs or not. When, then, the humerus is displaced into the axilla, many know how to reduce it since it is a common accident, but expertness[1] includes knowledge of all the methods by which practitioners effect reduction, and the best way of using these methods. You should use the most powerful one when you see the strongest need, and the method that will be described last is the most powerful.

II. Those who have frequent dislocations of the shoulder are usually able to put it in for themselves. For by inserting the fist of the other hand into the armpit they forcibly push up the head of the bone, while they draw the elbow to the chest. And a practitioner would reduce it in the same way if, after putting his fingers under the armpit inside the head of the dislocated bone, he should force it away from the ribs, thrusting his head against the top of the shoulder to get a point of resistance, and with his knees thrusting against the arm at the elbow, should make counter-pressure towards the ribs—it is well for the operator to have strong hands—or, while he

[1] "'Tis a skilful man's part" (Liddell and Scott). "An easy thing to teach" (Adams).

[1] κάλλιστα χρῷτο. [2] οἷσι . . . πυκνὰ. [3] πολὺ.

αὐτὸς μὲν τῇσι χερσὶ καὶ τῇ κεφαλῇ οὕτω ποιοίη, ἄλλος[1] δέ τις τὸν ἀγκῶνα παράγοι παρὰ τὸ στῆθος.

Ἔστι δὲ ἐμβολὴ ὤμου καὶ ἐς τοὐπίσω ὑπερβάλλοντα τὸν πῆχυν ἐπὶ τὴν ῥάχιν, ἔπειτα τῇ μὲν ἑτέρῃ χειρὶ ἀνακλᾶν ἐς τὸ ἄνω τοῦ ἀγκῶνος ἐχόμενον, τῇ δὲ ἑτέρῃ παρὰ τὸ ἄρθρον ὄπισθεν ἐρείδειν. αὕτη ἡ ἐμβολή, καὶ ἡ πρόσθεν εἰρημένη, οὐ κατὰ φύσιν ἐοῦσαι, ὁμως ἀμφισφάλλουσαι τὸ ἄρθρον ἀναγκάζουσιν ἐμπίπτειν.

III. Οἱ δὲ τῇ πτέρνῃ πειρώμενοι ἐμβάλλειν, ἐγγύς τι τοῦ κατὰ φύσιν ἀναγκάζουσιν. χρὴ δὲ τὸν μὲν ἄνθρωπον χαμαὶ κατακλίναι ὕπτιον, τὸν δὲ ἐμβάλλοντα χαμαὶ ἵζεσθαι ἐφ' ὁπότερα ἂν τὸ ἄρθρον ἐκπεπτώκῃ· ἔπειτα λαβόμενον τῇσι χερσὶ τῇσιν ἑωυτοῦ τῆς χειρὸς τῆς σιναρῆς, κατατείνειν αὐτήν, τήν τε πτέρνην ἐς τὴν μασχάλην ἐμβάλλοντα ἀντωθεῖν, τῇ μὲν δεξιῇ ἐς τὴν δεξιήν, τῇ δὲ ἀριστέρῃ ἐς τὴν ἀριστερήν. δεῖ δὲ ἐς τὸ κοῖλον τῆς μασχάλης ἐνθεῖναι στρογγύλον τι ἐνάρμοσσον· ἐπιτηδειόταται δὲ αἱ πάνυ σμικραὶ σφαῖραι καὶ σκληραί, οἷαι πολλαὶ ἐκ τῶν σκυτέων[2] ῥάπτονται· ἢν γὰρ μή τι τοιοῦτον ἐγκέηται, οὐ δύναται ἡ πτέρνη ἐξικνεῖσθαι πρὸς τὴν κεφαλὴν τοῦ βραχίονος· κατατεινομένης γὰρ τῆς χειρὸς κοιλαίνεται ἡ μασχάλη· οἱ γὰρ τένοντες οἱ ἔνθεν καὶ ἔνθεν τῆς μασχάλης ἀντισφίγγοντες ἐναντίοι εἰσίν. χρὴ δέ τινα ἐπὶ θάτερα τοῦ κατατεινομένου καθήμενον κατέχειν κατὰ τὸν ὑγιέα ὦμον, ὡς μὴ περιέλκηται τὸ σῶμα, τῆς χειρὸς τῆς σιναρῆς ἐπὶ θάτερα τειν-

[1] ἕτερος. [2] ἐκ πολλῶν σκυτέων ποικίλων Weber.

uses his hands and head in this way, an assistant might draw the elbow to the chest.

There is also a way of putting in the shoulder by bringing the forearm backwards on to the spine, then with one hand turn upwards the part at the elbow, and with the other make pressure from behind at the joint. This method and the one described above, though not in conformity with nature,[1] nevertheless, by bringing round the head of the bone, force it into place.

III. Those who attempt to put in the shoulder with the heel, operate in a way nearly conformable with nature. The patient should lie on his back on the ground, and the operator should sit on the ground on whichever side the joint is dislocated. Then grasping the injured arm with both hands he should make extension and exert counter-pressure by putting the heel in the armpit, using the right heel for the right armpit, and the left for the left. In the hollow of the armpit one should put something round fitted to it,—the very small and hard balls such as are commonly sewn up from bits of leather are most suitable. For, unless something of the kind is inserted, the heel cannot reach the head of the humerus, for when extension is made on the arm the axilla becomes hollow and the tendons on either side of it form an obstacle by their contraction. Someone should be seated on the other side of the patient undergoing extension to fix the sound shoulder so that his body is not drawn round when the injured arm is pulled the other way.

[1] "Because without traction," Apollon., referring to *Fract.* I.

ομένης· ἔπειτα ἱμάντος μαλθακοῦ πλάτος ἔχοντος ἱκανόν, ὅταν ἡ σφαῖρη ἐντεθῇ ἐς τὴν μασχάλην, περὶ τὴν σφαῖραν περιβεβλημένου τοῦ ἱμάντος, καὶ κατέχοντος, λαβόμενον ἀμφοτέρων τῶν ἀρχέων τοῦ ἱμάντος, ἀντικατατείνειν τινά, ὑπὲρ τῆς κεφαλῆς τοῦ κατατεινομένου καθήμενον, τῷ ποδὶ προσβάντα πρὸς τοῦ ἀκρωμίου τὸ ὀστέον. ἡ δὲ σφαῖρα ὡς ἐσωτάτω καὶ ὡς μάλιστα πρὸς
30 τῶν πλευρέων κείσθω, καὶ μὴ ἐπὶ τῇ κεφαλῇ
31 τοῦ βραχίονος.

IV. Ἔστι δὲ καὶ ἄλλη ἐμβολή, ἣ κατωμίζουσιν[1] ἐς ὀρθόν· μείζω μέντοι εἶναι χρὴ τὸν κατωμίζοντα, διαλαβόντα δὲ τὴν χεῖρα ὑποθεῖναι τὸν ὦμον τὸν ἑωυτοῦ ὑπὸ τὴν μασχάλην ὀξύν· κἄπειτα ὑποστρέψαι, ὡς ἂν ἐνίζηται ἕδρη, οὕτω στοχασάμενον ὅπως ἀμφὶ τὸν ὦμον τὸν ἑωυτοῦ κρεμάσαι τὸν ἄνθρωπον κατὰ τὴν μασχάλην· αὐτὸς δὲ ἑωυτὸν ὑψηλότερον ἐπὶ τοῦτον τὸν ὦμον ποιείτω ἢ ἐπὶ τὸν ἕτερον· τοῦ δὲ κρεμαμένου τὸν
10 βραχίονα πρὸς τὸ ἑωυτοῦ στῆθος προσαναγκαζέτω ὡς μάλιστα· ἐν τούτῳ δὲ τῷ σχήματι προσανασειέτω, ὁπόταν[2] μετεωρίσῃ τὸν ἄνθρωπον, ὡς ἀντιῤῥέποι τὸ ἄλλο σῶμα αὐτῷ, ἀντίον τοῦ βραχίονος τοῦ κατεχομένου· ἢν δὲ ἄγαν κοῦφος ᾖ ὁ ἄνθρωπος, προσεπικρεμασθήτω[3] τούτου ὄπισθέν τις κοῦφος παῖς. αὗται δὲ ἐμβολαὶ πᾶσαι κατὰ παλαίστρην εὔχρηστοί

[1] ὡς κατωμίζουσιν Galen, Kw. [2] ὅταν—ἀντιῤῥέπῃ.
[3] προσεκκρεμασθήτω.

[1] This is the common method of reducing the shoulder-joint, and seems to be that chiefly used in Greek gymnasia. Cf. Galen's account of what happened to him when he dis-

Take, besides, a fairly broad strap of soft leather, and after the ball is put into the armpit, the strap being put round and fixing it, someone, seated at the head of the patient undergoing traction, should make counter-extension by holding the ends of the strap, and pressing his foot against the top of the shoulder-blade. The ball should be put as far into the armpit and as near the ribs as possible, not under the head of the humerus.[1]

IV. There is another mode of reduction in which they put it right by a shoulder lift[2]: but he who does the shoulder lift must be the taller. Grasping the patient's arm, let the operator put the point of his own shoulder under his armpit, then make a turn that it may get seated there, the aim of the manœuvre being to suspend the patient from his shoulder by the armpit. He should hold this shoulder higher than the other, and press in the arm of the suspended patient as far as possible towards his own chest. In this attitude let him proceed to shake the patient when he lifts him up, so that the rest of the body may act as a counterpoise to the arm which is held down. If the patient is very light, a boy of small weight should be suspended to him from behind. All these methods are very useful in the palaestra, since they do not require

located his collar-bone. He rightly remarks that the little ball cannot be put between the ribs and the head of the bone. XVIII(1), 332.

[2] All editors who translate *ἐς ὀρθόν* make it mean "standing." Föes-Erm: "in erecti et stantis humerum aeger extollitur"; Littré-Adams, "performed by the shoulder of a person standing"; Petrequin alone prefers the patient—"sur le malade debout." But after all the expression seems to go best with the verb.

εἰσιν, ὅτι οὐδὲν ἀλλοίων ἁρμένων δέονται ἐπεισεν-
19 εχθῆναι· χρήσαιτο δ' ἄν τις καὶ ἄλλοθι.

V. Ἀτὰρ καὶ οἱ περὶ τὰ ὕπερα ἀναγκάζοντες ἐγγύς τι τοῦ κατὰ φύσιν ἐμβάλλουσιν. χρὴ δὲ τὸ μὲν ὕπερον κατειλίχθαι ταινίῃ τινὶ μαλθακῇ —ἧσσον γὰρ ἂν ὑπολισθάνοι—ὑπηναγκάσθαι δὲ μεσηγὺ τῶν πλευρέων καὶ τῆς κεφαλῆς τοῦ βραχίονος· καὶ ἢν μὲν βραχὺ ᾖ τὸ ὕπερον, καθῆσθαι χρὴ τὸν ἄνθρωπον ἐπί τινος ὡς μόλις τὸν βραχίονα περιβάλλειν δύνηται περὶ τὸ ὕπερον· μάλιστα δὲ ἔστω μακρότερον τὸ ὕπερον,
10 ὡς ἂν ἑστεὼς ὁ ἄνθρωπος κρέμασθαι μικροῦ δέῃ ἀμφὶ τῷ ξύλῳ. κἄπειτα ὁ μὲν βραχίων καὶ ὁ πῆχυς παρατεταμένος παρὰ τὸ ὕπερον ἔστω, τὸ δὲ ἐπὶ θάτερα τοῦ σώματος καταναγκαζέτω τις, περιβάλλων κατὰ τὸν αὐχένα παρὰ τὴν κληῖδα τὰς χεῖρας. αὕτη ἡ ἐμβολὴ κατὰ φύσιν ἐπιεικέως ἐστί καὶ ἐμβάλλειν δύναται, ἢν χρηστῶς σκευά-
17 σωνται αὐτήν.

VI. Ἀτὰρ καὶ ἡ διὰ τοῦ κλιμακίου ἑτέρη τις τοιαύτη, καὶ ἔτι βελτίων, ὅτι ἀσφαλεστέρως ἂν τὸ σῶμα, τὸ μὲν τῇ, τὸ δὲ τῇ ἀντισηκωθείη μετεωρισθέν· περὶ γὰρ τὸ ὑπεροειδὲς ὁ ὦμος ἦν καὶ καταπεπήγῃ, περισφάλλεσθαι τὸ σῶμα κίνδυνος ἢ τῇ ἢ τῇ. χρὴ μέντοι καὶ ἐπὶ τῷ κλιμακτῆρι ἐπιδεδέσθαι τι ἄνωθεν στρογγύλον ἐνάρμοσσον ἐς τὸ κοῖλον τῆς μασχάλης, ὃ προσδιαναγκάζει τὴν κεφαλὴν τοῦ βραχίονος ἐς
10 τὴν φύσιν ἀπιέναι.

VII. Κρατίστη μέντοι πασέων τῶν ἐμβολῶν ἡ τοιήδε· ξύλον χρὴ εἶναι πλάτος μὲν ὡς πεντεδάκτυλον, ἢ τετραδάκτυλον τὸ ἐπίπαν,

further bringing in of apparatus, and one might also use them elsewhere.

V. Again, those who reduce by a forcible movement round pestles come fairly near the natural method. The pestle should have a soft band wrapped round it (for this will make it less slippery) and be pressed in between the ribs and the head of the humerus. If the pestle is short the patient should be so seated on something that he can just get his arm over it, but as a rule the pestle should be rather long so that the patient when erect is almost suspended on the post. Then let the arm and forearm be pulled down beside the pestle, while an assistant putting his arms round the patient's neck at the collar-bone forces the body down on the other side. This method is tolerably natural and able to reduce the dislocation if they arrange it well.

VI. Again there is another similar method with the ladder, which is still better, since the body when lifted up is more safely kept in equilibrium on either side. For with the pestle, though the shoulder may be fixed, there is danger of the body slipping round to one side or the other. But on the ladder-step also something rounded should be fastened on the upper side, which, fitting into the hollow of the armpit, helps to force the head of the humerus back to its natural place.

VII. The most powerful of all methods of reduction, however, is the following. There should be a piece of wood about five, or four fingers in breadth

πάχος δὲ ὡς διδάκτυλον ἢ καὶ λεπτότερον, μῆκος δὲ δίπηχυ, ἢ καὶ ὀλίγῳ[1] ἔλασσον. ἔστω δὲ ἐπὶ θάτερα τὸ ἄκρον περιφερὲς καὶ στενότατον ταύτῃ καὶ λεπτότατον· ἄμβην δὲ ἐχέτω σμικρὰν ὑπερέχουσαν ἐπὶ τῷ ὑστάτῳ τοῦ περιφερέος, ἐν[2] τῷ μέρει, μὴ τῷ πρὸς τὰς πλευράς, ἀλλὰ τῷ πρὸς τὴν κεφαλὴν τοῦ βραχίονος ἔχοντι, ὡς ὑφαρμώσειε τῇ μασχάλῃ παρὰ τὰς πλευρὰς ὑπὸ τὴν κεφαλὴν τοῦ βραχίονος ὑποτιθέμενον· ὀθονίῳ δὲ ἢ ταινίῃ μαλθακῇ κατακεκολλήσθω ἄκρον τὸ ξύλον, ὅπως προσηνέστερον ᾖ. ἔπειτα χρή, ὑπώσαντα τὴν κεφαλὴν τοῦ ξύλου ὑπὸ τὴν μασχάλην ὡς ἐσωτάτω μεσηγὺ τῶν πλευρέων καὶ τῆς κεφαλῆς τοῦ βραχίονος, τὴν δὲ ὅλην χεῖρα πρὸς τὸ ξύλον κατατείναντα προσκαταδῆσαι κατά τε τὸν βραχίονα, κατά τε τὸν πῆχυν, κατά τε τὸν καρπὸν τῆς χειρός, ὡς ἂν ἀτρεμῇ ὅτι μάλιστα· περὶ παντὸς δὲ χρὴ ποιεῖσθαι, ὅπως τὸ ἄκρον τοῦ ξύλου ὡς ἐσωτάτω τῆς μασχάλης ἔσται, ὑπερβεβηκὸς τὴν κεφαλὴν τοῦ βραχίονος. ἔπειτα χρὴ μεσηγὺ δύο στύλων στρωτῆρα πλάγιον εὖ προσδῆσαι, ἔπειτα ὑπερενεγκεῖν τὴν χεῖρα σὺν τῷ ξύλῳ ὑπὲρ τοῦ στρωτῆρος. ὅπως ἡ μὲν χεὶρ ἐπὶ θάτερα ᾖ, ἐπὶ θάτερα δὲ τὸ σῶμα, κατὰ δὲ τὴν μασχάλην ὁ στρωτὴρ· κἄπειτα ἐπὶ μὲν θάτερα τὴν χεῖρα καταναγκάζειν σὺν τῷ ξύλῳ περὶ τὸν στρωτῆρα, ἐπὶ θάτερα δὲ τὸ ἄλλο σῶμα. ὕψος δὲ ἔχων ὁ στρωτὴρ προσδεδέσθω, ὥστε μετέωρον τὸ ἄλλο σῶμα εἶναι ἐπ' ἄκρων τῶν ποδῶν. οὗτος ὁ τρόπος παρὰ πολὺ κράτιστος ἐμβολῆς ὅμου· δικαιότατα μὲν γὰρ μοχλεύει, ἢν καὶ μοῦνον ἐσωτέρω ᾖ τὸ ξύλον τῆς κεφαλῆς

as a rule, about two fingers thick or even thinner, and in length two cubits or a little less. Let it be rounded at one end and be thinnest and narrowest there, and at the extremity of the rounded end let it have a slightly projecting rim (*ambé*) not on the side towards the ribs but on that towards the head of the humerus, so as to fit into the armpit when inserted along the ribs under the head of the humerus, and the end of the wood should have linen or a soft band glued over it that it may be more comfortable. One should then insert the tip of the instrument as far as possible under the armpit between the ribs and the head of the humerus, and extending the whole arm along the wood, fasten it down at the upperarm, forearm and wrist, so as to be as immobile as possible. Above all, one should manage to get the tip of the instrument as far into the armpit as possible, up above the head of the humerus. Then a cross-bar should be firmly fastened between two posts and next one should bring the arm with the instrument over the bar, so that the arm is on one side, the body on the other and the cross-bar at the armpit. Then on one side press down the arm with the instrument round the beam, on the other side the rest of the body. The beam should be fastened at such a height that the rest of the body is suspended on tiptoe. This is by far the most powerful method for reducing the shoulder, for it makes the most correct leverage, if only the instrument is well on

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[1] Omit καὶ.
[2] ἐπὶ.

τοῦ βραχίονος· δικαιόταται δὲ αἱ ἀντιῤῥοπαί, ἀσφαλέες δὲ τῷ ὀστέῳ τοῦ βραχίονος. τὰ μὲν οὖν νεαρὰ ἐμπίπτει θᾶσσον ἢ ὡς ἄν τις οἴοιτο, πρὶν ἢ καὶ κατατετάσθαι δοκεῖν· ἀτὰρ καὶ τὰ παλαιὰ μούνη αὕτη τῶν ἐμβολέων οἵη τε ἐμβιβάσαι, ἢν μὴ ἤδη ὑπὸ χρόνου σὰρξ μὲν ἐπελήλυθῃ ἐπὶ τὴν κοτύλην, ἢν δὲ κεφαλὴ τοῦ βραχίονος ἤδη τρίβον ἑωυτῇ πεποιημένη ᾖ ἐν τῷ χωρίῳ, ἵνα ἐξεκλίθη· οὐ μὴν ἀλλ' ἐμβάλλειν γάρ μοι δοκεῖ [1] καὶ οὕτω πεπαλαιωμένον ἔκπτωμα τοῦ βραχίονος—τί γὰρ ἂν δικαίη μόχλευσις οὐχὶ κινήσειεν;—μένειν μέντοι οὐκ ἄν μοι δοκέοι κατὰ χώρην, ἀλλ' ὀλισθάνειν ἂν ὡς τὸ [2] ἔθος.

Τὸ αὐτὸ δὲ ποιεῖ καὶ περὶ κλιμακτῆρα καταναγκάζειν τοῦτον τὸν τρόπον σκευάσαντα. πάνυ μὴν ἱκανῶς ἔχει καὶ περὶ μέγα ἔδος Θεσσαλικὸν ἀναγκάζειν, ἢν νεαρὸν ᾖ τὸ ὀλίσθημα. ἐσκευάσθαι μέντοι χρὴ τὸ ξύλον οὕτως, ὥσπερ εἴρηται· ἀτὰρ τὸν ἄνθρωπον καθίσαι πλάγιον ἐπὶ τῷ δίφρῳ· κἄπειτα τὸν βραχίονα σὺν τῷ ξύλῳ ὑπερβάλλειν ὑπὲρ τοῦ ἀνακλισμοῦ, καὶ ἐπὶ μὲν θάτερα τὸ σῶμα καταναγκάζειν, ἐπὶ δὲ θάτερα τὸν βραχίονα σὺν τῷ ξύλῳ. τὸ αὐτὸ δὲ ποιεῖ [3] καὶ ὑπὲρ δίκλειδος θύρης ἀναγκάζειν· χρῆσθαι δὲ χρὴ αἰεὶ τούτοισιν, ἃ ἂν τύχῃ παρεόντα.

VIII. Εἰδέναι μὲν οὖν χρὴ ὅτι φύσιες φυσίων

[1] ἄν μοι δοκέοι. [2] ἐς τὸ. [3] ποιεῖν.

[1] An old-fashioned straight-backed chair, Galen. Adams is enthusiastic over this method For the ambé fasten a jack-towel above the patient's elbow: put your foot in the loop and gradually increase the tension. You will do the

the inner side of the head of the humerus. The counterpoise is also most correct and without risk to the bone of the arm. Indeed, recent cases are reduced more rapidly than one would believe, even before any apparent extension has been made, while, as for old standing cases, this method alone is able to reduce them, unless by lapse of time the tissues have already invaded the articular cavity and the head of the humerus has made a friction cavity for itself in the place to which it has slipped. Nevertheless I think it would reduce even so inveterate a dislocation of the arm—for what would not correct leverage move?—but I should not suppose it would stay in position, but slip back to its old place. The same result is obtained by pressure round the rung of a ladder, arranging it in the same way. Also the operation is very effectively done on a large Thessalian chair,[1] if the dislocation is recent. In this case the wooden instrument should be prepared as directed while the patient is seated sideways on the chair. Then put the arm with the instrument over the chair-back, and press down the body on one side, and the arm with the instrument on the other. The same result is obtained by operating over (the lower half of)[2] a double door. One should always make use of what happens to be at hand.

VIII. One should bear in mind that there are

job quickly, safely and almost pleasantly, if the arm and chair top are properly padded.

[2] Apollonius strangely illustrates this by an ordinary vertical (folding) double door. As Galen points out, it refers to doors which open in two halves above and below, usually with a cross-bar between.

μέγα διαφέρουσιν ἐς τὸ ῥηϊδίως ἐμπίπτειν τὰ ἐκπίπτοντα· διενέγκοι μὲν γὰρ ἄν τι καὶ κοτύλη κοτύλης, ἡ μὲν εὐϋπέρβατος ἐοῦσα, ἡ δὲ ἧσσον· πλεῖστον δὲ διαφέρει καὶ τῶν νεύρων ὁ σύνδεσμος, τοῖσι μὲν ἐπιδόσιας ἔχων, τοῖσι δὲ συντεταμένος [ἐών].[1] καὶ γὰρ ἡ ὑγρότης τοῖσι ἀνθρώποισι γίνεται ἡ ἐκ τῶν ἄρθρων, διὰ τῶν νεύρων τὴν ἀπάρτισιν, ἣν χαλαρά τε ᾖ φύσει καὶ τὰς ἐπιτάσιας εὐφόρως φέρῃ· συχνοὺς γὰρ ἄν τις ἴδοι, οἳ οὕτως ὑγροί εἰσιν, ὥστε, ὁπόταν ἐθέλωσι, τότε ἑαυτοῖσι τὰ ἄρθρα ἐξίστανται ἀνωδύνως, καὶ καθίστανται ἀνωδύνως. διαφέρει μέντοι τι καὶ σχέσις τοῦ σώματος· τοῖσι μὲν γὰρ εὖ ἔχουσι τὸ γυῖον καὶ σεσαρκωμένοισιν ἐκπίπτει τε ἧσσον, ἐμπίπτει δὲ χαλεπώτερον· ὅταν δὲ αὐτοὶ σφέων αὐτῶν λεπτότεροι καὶ ἀσαρκότεροι ἔωσι, τότε ἐκπίπτει τε μᾶλλον, ἐμπίπτει δὲ ῥᾷον. σημεῖον δέ, ὅτι ταῦτα οὕτως ἔχει, καὶ τόδε· τοῖσι γὰρ βουσὶ τότε ἐκπίπτουσι μᾶλλον οἱ μηροὶ ἐκ τῆς κοτύλης, ἡνίκα ἂν αὐτὰ σφέων αὐτῶν λεπτότατοι ἔωσιν· γίνονται δὲ βόες λεπτότατοι, τοῦ χειμῶνος τελευτῶντος· τότε οὖν καὶ ἐξαρθρέουσι μάλιστα, εἰ δή τι καὶ τοιοῦτο δεῖ ἐν ἰητρικῇ γράψαι· δεῖ δέ· καλῶς γὰρ Ὅμηρος καταμεμαθήκει, ὅτι πάντων τῶν προβάτων βόες μάλιστα πονέουσι[2] ταύτην τὴν ὥρην, καὶ βοῶν οἱ ἀρόται, ὅτι [κατὰ][3] τὸν χειμῶνα ἐργάζονται. τούτοισι τοίνυν καὶ ἐκπίπτει μάλιστα· οὗτοι γὰρ μάλιστα λεπτύνονται· τὰ μὲν γὰρ ἄλλα βοσκήματα δύναται βραχείην τὴν ποίην βόσκεσθαι· βοῦς δὲ οὐ μάλα, πρὶν βαθεῖα γένηται· τοῖσι μὲν γὰρ ἄλλοισίν ἐστι λεπτὴ ἡ πρυβολὴ τοῦ χείλεος, λεπτὴ δὲ ἡ ἄνω

great natural diversities as to the easy reduction of dislocations. There may be some difference in the sockets, one having a rim easy to cross, the other one less so; but the greatest diversity is the attachment of the ligaments, which in some cases is yielding, in others constricted. For the humidity in individuals as regards the joints comes from the disposition of the ligaments which may be slack by nature and easily lend themselves to extensions. In fact one may see many persons of so humid a temperament that when they choose they can dislocate and reduce their joints without pain. The state of the body makes a further difference, for in those who are muscular and have the limb in good condition dislocation is rarer and reduction more difficult, but when they are thinner and less muscular than usual dislocation is more frequent and reduction easier. The following also shows that this is so. In the case of cattle the thigh bones get dislocated from the socket when they are at their thinnest. Now cattle are thinnest at the end of winter, and it is then especially that they have dislocations, if indeed such a matter should be cited in a medical work. And it should be, for Homer has well observed that of all farm beasts cattle suffer most during this season, and among cattle the ploughing oxen because they work in the winter. It is in these, then, that dislocation especially occurs, for they are especially attenuated. For other farm animals can graze on herbage while short, but cattle can hardly do so till it is long, since in the others the projection of the lip is thin,

[1] Omit Erm., Kw. [2] ἀτυνέουσι.
[3] Omit Erm., Kw.

γνάθος· βοὶ δὲ παχείη μὲν ἡ προβολὴ τοῦ χείλεος, παχείη δὲ καὶ ἀμβλεῖα ἡ ἄνω γνάθος· διὰ ταῦτα ὑποβάλλειν ὑπὸ τὰς βραχείας ποίας οὐ δύναται. τὰ δὲ αὖ μώνυχα τῶν ζώων, ἅτε ἀμφώδοντα ἐόντα, δύναται μὲν σαρκάζειν, δύναται δὲ ὑπὸ τὴν βραχείην ποίην ὑποβάλλειν τοὺς ὀδόντας, καὶ ἥδεται τῇ οὕτως ἐχούσῃ ποίῃ μᾶλλον ἢ τῇ βαθείῃ· καὶ γὰρ τὸ ἐπίπαν ἀμείνων καὶ στερεωτέρη ἡ βραχείη ποίη τῆς βαθείης ποτὶ καὶ πρὶν ἐκκαρπεῖν τὴν βαθείην. διὰ τοῦτο οὖν ἐποίησεν ὧδε τάδε τὰ ἔπη—Ὡς δ' ὁπότ' ἀσπάσιον ἔαρ ἦλυθε βουσὶν ἔλιξιν—ὅτι ἀσμενωτάτη [τοῖσιν][1] αὐτοῖσιν ἡ βαθείη ποίη φαίνεται. ἀτὰρ καὶ ἄλλως ὁ βοῦς χαλαρὸν φύσει τὸ ἄρθρον τοῦτο ἔχει μᾶλλον τῶν ἄλλων ζώων· διὰ τοῦτο καὶ εἰλίπουν[2] ἐστὶ μᾶλλον τῶν ἄλλων ζώων, καὶ μάλιστα ὅταν λεπτὸν[3] καὶ γηραλέον[4] ᾖ. διὰ ταῦτα πάντα καὶ ἐκπίπτει βοὶ μάλιστα. πλείω δὲ γέγραπται περὶ αὐτοῦ, ὅτι πάντων τῶν προειρημένων ταῦτα μαρτύριά ἐστιν.

Περὶ οὗ οὖν ὁ λόγος, τοῖσιν[5] ἀσάρκοισι μᾶλλον ἐκπίπτει καὶ θᾶσσον ἐμπίπτει ἢ τοῖσιν εὖ σεσαρκωμένοισι· καὶ ἧσσον ἐπιφλεγμαίνει τοῖσι ὑγροῖσι καὶ τοῖσιν ἀσάρκοισιν ἢ τοῖσι σκελιφροῖσι[6] καὶ σεσαρκωμένοισι, καὶ ἧσσόν γε δέδεται ἐς τὸν ἔπειτα χρόνον· ἀτὰρ καὶ εἰ μύξα πλείων ὑπείη τοῦ μετρίου μὴ σὺν φλεγμονῇ, καὶ οὕτως ἂν ὀλισθηρὸν εἴη, μυξωδέσ-

[1] Omit Littré, Erm. Kw.
[2] εἰλίπους: Erm.'s correction which Kw. follows as with the other adjectives, but they surely go with ζώων.
[3] λεπτὸς. [4] γέρων.

as is also the upper jaw, but in the ox the projection of the lip is thick and the upper jaw thick and blunt, wherefore he cannot grasp the short herbage. But the solid-hoofed animals, having a double row of teeth, can not only browse but can also grasp the short herbage with their teeth, and they prefer this kind to the long grass. In fact the short grass is on the whole better and of more substance than the long, especially when the long is just going to seed. It is in allusion to this that he wrote the following verse :—

"As when the season of spring arrives welcome to crumple-horned cattle,"[1]

because the long grass appears most welcome to them. Moreover in the ox this joint is generally more lax than in other animals, and for this reason it has a more shambling gait than other animals, especially when it is thin and old. For all these reasons the joint is especially liable to dislocation in the ox, and more has been written about it because these facts testify to all the preceding statements.

To return to the subject, dislocation occurs more easily and is more quickly reduced in emaciated than in muscular persons, and inflammation more rarely supervenes in the moist and thin than in muscular subjects of a dry habit, but the joint is not so firm afterwards. Further, if an excess of mucous substance is engendered without inflammation, this too will make it liable to slip, and, on

[1] Not in our Homer.

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[5] ὅτι τοῖσι. [6] σκληροῖσι.

τερα γὰρ τοὐπίπαν τὰ ἄρθρα τοῖσι ἀσάρκοισι ἢ τοῖσι σεσαρκωμένοισίν ἐστιν· καὶ γὰρ αὗται αἱ σάρκες τῶν μὴ ἀπὸ τέχνης ὀρθῶς[1] λελιμαγχημένων, αἱ τῶν λεπτῶν μυξωδέστεραί εἰσιν ἢ αἱ τῶν παχέων. ὅσοισι μέντοι σὺν φλεγμονῇ μύξα ὑπογίνεται, ἡ φλεγμονὴ δήσασα ἔχει τὸ ἄρθρον· διὰ τοῦτο οὐ μάλα ἐκπίπτει τὰ ὑπόμυξα, ἐκπίπτοντα ἄν, εἰ μή τι ἢ πλέον ἢ ἔλασσον φλεγμονῆς ὑπεγένετο.

IX. Οἷσι μὲν οὖν ὅταν[2] ἐμπέσῃ τὸ ἄρθρον καὶ μὴ ἐπιφλεγμήνῃ τὰ περιέχοντα, χρῆσθαί τε ἀνωδύνως αὐτίκα τῷ ὤμῳ δύνανται, οὗτοι μὲν οὐδὲν νομίζουσι δεῖν ἑωυτῶν ἐπιμελεῖσθαι· ἰητροῦ μήν ἐστι καταμαντεύσασθαι τῶν τοιούτων· τοῖσι τοιούτοισι γὰρ ἐκπίπτει καὶ αὖθις μᾶλλον ἢ οἷσιν ἂν ἐπιφλεγμήνῃ τὰ νεῦρα. τοῦτο κατὰ πάντα τὰ ἄρθρα οὕτως ἔχει, καὶ μάλιστα κατ' ὦμον καὶ κατὰ γόνυ· μάλιστα γὰρ οὖν καὶ ὀλισθάνει ταῦτα. οἷσι δ' ἂν ἐπιφλεγμήνῃ [τὰ νεῦρα],[3] οὐ δύνανται χρῆσθαι τῷ ὤμῳ· κωλύει γὰρ ἡ ὀδύνη καὶ ἡ σύντασις τῆς φλεγμονῆς. τοὺς οὖν τοιούτους ἰῆσθαι χρὴ κηρωτῇ καὶ σπλήνεσι καὶ ὀθονίοισι πολλοῖσι ἐπιδέοντα· ὑποτιθέναι δὲ ἐς τὴν μασχάλην εἴριον μαλθακὸν καθαρὸν συνειλίσσοντα ἐκπλήρωμα τοῦ κοίλου ποιοῦντα ἵνα ἀντιστήριγμα μὲν τῇ ἐπιδέσει ᾖ, ἀνακωχῇ δὲ τὸ ἄρθρον· τὸν δὲ βραχίονα χρὴ ἐς τὸ ἄνω ῥέποντα ἴσχειν τὰ πλεῖστα· οὕτω γὰρ ἂν ἑκαστάτω εἴη τοῦ χωρίου ἐς ὃ ὤλισθεν ἡ κεφαλὴ τοῦ ὤμου· χρὴ δέ, ὅταν ἐπιδήσῃς τὸν

[1] ὀρθῆς. [2] ἄν, Littré's suggestion.
[3] Omit B, Kw.

the whole, the joints of emaciated persons contain more mucus than those of muscular individuals. One sees, in fact, that these tissues in emaciated persons, who have not been normally reduced according to the principles of the art, have more mucosity than those of stout people. But in those in whom mucus develops along with inflammation, the inflammation keeps the joint firm. This is why the joints do not often get dislocated from a slight excess of mucus, though they would do so were there not more or less inflammation at the bottom of it.

IX. Should, however, no inflammation of the surrounding parts supervene after the reduction of the joint, patients can at once use the shoulder without pain, and these persons think there is no further necessity to take care of themselves. It is, then, the practitioner's business to act the prophet for such, for it is in such that dislocation occurs again, rather than in cases where inflammation of the ligaments may have supervened. This is the case with all joints and especially those at the shoulder and knee, for they are specially liable to dislocation. Those in whom inflammation may have supervened cannot use the shoulder, for the pain and inflammatory tension prevents it. One should treat such cases with cerate, compresses, and plenty of bandages, also put a soft roll of cleansed wool under the armpit, making a plug for the cavity that it may form a fulcrum for the bandage and prop up the head of the bone. The arm should be kept as far as possible pressed upwards, for so the head of the humerus will be furthest from the place into which it was dislocated. After bandaging the shoulder you should proceed to fasten

ὦμον, ἔπειτα προσκαταδεῖν τὸν βραχίονα πρὸς τὰς πλευρὰς ταινίῃ τινὶ κύκλῳ περὶ τὸ σῶμα περιβάλλοντα. χρὴ δὲ καὶ ἀνατρίβειν τὸν ὦμον ἡσυχαίως καὶ λιπαρῶς· πολλῶν ἔμπειρον δεῖ εἶναι τὸν ἰητρόν, ἀτὰρ δὴ καὶ ἀνατρίψιος· ἀπὸ τοῦ αὐτοῦ ὀνόματος οὐ τωὐτὸ ἀποβαίνει· καὶ γὰρ ἂν δήσειεν ἄρθρον ἀνάτριψις, χαλαρώτερον τοῦ καιροῦ ἐόν, καὶ λύσειεν ἄρθρον σκληρότερον
30 τοῦ καιροῦ ἐόν· ἀλλὰ διοριεῖται ἡμῖν περὶ ἀνατρίψιος ἐν ἄλλῳ λόγῳ. τὸν γοῦν τοιοῦτον ὦμον μαλθακῆσί τε χερσὶν ἀνατρίβειν συμφέρει, καὶ ἄλλως πρηέως· τὸ δὲ ἄρθρον διακινεῖν, μὴ βίῃ, ἀλλὰ τοσοῦτον ὅσον ἀνωδύνως κινήσεται. καθίσταται δὲ πάντα, τὰ μὲν ἐν πλέονι χρόνῳ, τὰ
36 δ' ἐν ἐλάσσονι.

Χ. Γιγνώσκειν δὲ εἰ ἐκπέπτωκεν ὁ βραχίων τοιοῖσδε χρὴ τοῖς σημείοισι· τοῦτο μέν, ἐπειδὴ δίκαιον ἔχουσι τὸ σῶμα οἱ ἄνθρωποι, καὶ τὰς χεῖρας καὶ τὰ σκέλεα, παραδείγματι χρῆσθαι δεῖ τῷ ὑγιεῖ πρὸς τὸ μὴ ὑγιές, καὶ τῷ μὴ ὑγιεῖ πρὸς τὸ ὑγιές, μὴ τὰ ἀλλότρια ἄρθρα καθορῶντα—ἄλλοι γὰρ ἄλλων μᾶλλον ἔξαρθροι πεφύκασιν—ἀλλὰ τοῦ αὐτοῦ τοῦ κάμνοντος, ἢν ἀνόμοιον ᾖ τὸ ὑγιὲς τῷ κάμνοντι. καὶ τοῦτο
10 εἴρηται μὲν ὀρθῶς, παρασύνεσιν δὲ ἔχει πάνυ πολλὴν διὰ τὰ τοιαῦτα, καὶ οὐκ ἀρκεῖ μοῦνον λόγῳ εἰδέναι τὴν τέχνην ταύτην, ἀλλὰ καὶ ὁμιλίῃ ὁμιλεῖν· πολλοὶ γάρ, ὑπὸ ὀδύνης, ἢ καὶ ὑπ' ἀλλοίης προφάσιος, οὐκ ἐξεστεώτων αὐτοῖσι τῶν ἄρθρων, ὅμως οὐ δύνανται ἐς τὰ ὅμοια σχήματα καθεστάναι ἐς οἷά περ τὸ ὑγιαῖνον[1] σῶμα σχηματίζεται· προσσυνιέναι μὲν οὖν καὶ

the arm to the side with some sort of band, passing it horizontally round the body, and the shoulder should be gently and perseveringly rubbed. The practitioner must be skilled in many things and particularly in friction (massage). Though called by one name it has not one and the same effect, for friction will make a joint firm when looser than it should be, and relax it when too stiff. But we shall define the rules for friction in another treatise. Now, for such a shoulder the proper friction is that with soft hands, and always gently. Move the joint about, without force, but so far as it can be moved without pain. All symptoms subside,[1] some in a longer, others in a shorter time.

X. A dislocation of the humerus may be recognised by the following signs. First, since men's bodies are symmetrical as to arms and legs, one should use the sound in comparison with the unsound, and the unsound with the sound; not observing other people's joints (for some have more projecting joints than others), but those of the patient himself, to see if the sound one is dissimilar to the one affected. And though this is correct advice there is a good deal of fallacy about it.[2] This is why it is not enough to know the art in theory only, but by familiar practice. For many persons owing to pain or some other cause, though their joints are not dislocated, cannot hold themselves in the attitude which the healthy body assumes. One must, therefore, take this also into

[1] "All joints re-establish themselves." Pq.; "Things get restored," Adams.

[2] Kw. punctuates after τοιαῦτα.

[1] ὑγιηρόν.

ἐννοεῖν καὶ τὸ τοιόνδε σχῆμα χρή. ἀτὰρ καὶ[1] ἐν τῇ μασχάλῃ ἡ κεφαλὴ τοῦ βραχίονος φαίνεται ἐγκειμένη πολλῷ μᾶλλον τοῦ ἐκπεπτωκότος ἢ τοῦ ὑγιέος· τοῦτο δέ, ἄνωθεν κατὰ τὴν ἐπωμίδα κοῖλον φαίνεται τὸ χωρίον· καὶ τὸ τοῦ ἀκρωμίου ὀστέον ἐξέχον[2] φαίνεται, ἅτε ὑποδεδυκότος τοῦ ἄρθρου ἐς τὸ κάτω τοῦ χωρίου—παρασύνεσιν μὴν καὶ ἐν τούτῳ ἔχει τινά, ἀλλὰ ὕστερον περὶ αὐτοῦ γεγράψεται, ἄξιον γὰρ γραφῆς ἐστί—τοῦτο δέ, τοῦ ἐκπεπτωκότος ὁ ἀγκὼν φαίνεται ἀφεστεὼς μᾶλλον ἀπὸ τῶν πλευρέων ἢ τοῦ ἑτέρου· εἰ μέντοι τις προσαναγκάζοι, προσάγεται μέν, ἐπιπόνως δέ· τοῦτο δέ, ἄνω τὴν χεῖρα ἆραι εὐθεῖαν παρὰ τὸ οὖς, ἐκτεταμένου τοῦ ἀγκῶνος, οὐ μάλα δύνανται, ὥσπερ τὴν ὑγιέα, οὐδὲ παράγειν ἔνθα καὶ ἔνθα ὁμοίως. τά τε οὖν σημεῖα ταὐτά ἐστιν, ὤμου ἐκπεπτωκότος· αἱ δὲ ἐμβολαὶ αἱ γεγραμμέναι αἵ τε ἰατρεῖαι αὗται.

XI. Ἐπάξιον δὲ τὸ μάθημα ὡς χρὴ ἰητρεύειν τοὺς πυκινὰ ἐκπίπτοντας ὤμους· πολλοὶ μὲν γὰρ ἤδη ἀγωνίης ἐκωλύθησαν διὰ ταύτην τὴν συμφορήν, τἄλλα πάντα ἀξιοχρήϊοι ἐόντες· πολλοὶ δὲ ἐν πολεμικοῖσιν ἀχρήϊοι[3] ἐγένοντο καὶ διεφθάρησαν διὰ ταύτην τὴν συμφορήν· ἅμα τε ἐπάξιον καὶ διὰ τοῦτο, ὅτι οὐδένα οἶδα ὀρθῶς ἰητρεύοντα, ἀλλὰ τοὺς μὲν μηδὲ ἐγχειρέοντας, τοὺς δὲ τἀναντία τοῦ συμφέροντος φρονέοντάς τε καὶ ποιέοντας. συχνοὶ γὰρ ἤδη ἰητροὶ ἔκαυσαν ὤμους ἐκπίπτοντας, κατά τε τὴν

[1] τοῦτο μὲν Apoll. B.Kw. [2] ἔξοχον.
[3] πολέμοις ἀχρεῖοι.

consideration and have such a position in mind. Now, first,[1] the head of the humerus is much more obvious in the armpit on the injured than on the sound side. Again, towards the top of the shoulder the part appears hollow, while the bone at the shoulder-point (acromion) is seen to project, since the articular end of the humerus has sunk to the lower part of the region. Yet there is some fallacy in this too, but it will be described later, for it merits description. Again the elbow of the dislocated limb obviously stands out more from the ribs than that of the other. If, indeed, one should forcibly adduct it, it yields, but with much pain. Further, the patient is quite unable to raise the arm straight alongside the ear, with the elbow extended, as he does with the sound one, or move it about in the same way. These, then, are the signs of a dislocated shoulder, the modes of reduction are the ones described, and these the methods of treatment.

XI. The proper treatment of those whose shoulders are often being dislocated is a thing worth learning. For many have been debarred from gymnastic contests, though well fitted in all other respects, and many have become worthless in warfare and have perished through this misfortune.[2] Another reason for its importance is the fact that I know of no one who uses the correct treatment, some not even attempting to take it in hand, while others have theories and practices the reverse of what is appropriate. For many practitioners cauterize shoulders

[1] Reading τοῦτο μὲν.

[2] Cf. *Airs Waters*, XX. on flabby joints of Scythians and their use of cautery.

ἐπωμίδα, κατά τε ἔμπροσθεν, ᾗ ἡ κεφαλὴ τοῦ βραχίονος ἐξογκεῖ, κατά τε τὸ ὄπισθεν ὀλίγον τῆς ἐπωμίδος. αὗται οὖν αἱ καύσεις, εἰ μὲν ἐς τὸ ἄνω ἐξέπιπτεν ὁ βραχίων, ἢ ἐς τὸ ἔμπροσθεν ἢ ἐς τὸ ὄπισθεν, ὀρθῶς ἂν ἔκαιον· νῦν δὲ δή, ὅτε ἐς τὸ κάτω ἐκπίπτει, ἐκβάλλουσιν αὗται αἱ καύσεις μᾶλλον ἢ κωλύουσιν· ἀποκλείουσι γὰρ τῆς ἄνω εὐρυχωρίης τὴν κεφαλὴν τοῦ βραχίονος.

Χρὴ δὲ ὧδε καίειν ταῦτα· ἀπολαβόντα τοῖσι δακτύλοισι κατὰ τὴν μασχάλην τὸ δέρμα, ἀφελκύσαι κατ' αὐτὴν τὴν ἴξιν μάλιστα, καθ' ἣν ἡ κεφαλὴ τοῦ βραχίονος ἐκπίπτει· ἔπειτα οὕτως ἀφειλκυσμένον τὸ δέρμα, διακαῦσαι ἐς τὸ πέρην. σιδηρίοισι δὲ χρὴ ταῦτα[1] καίειν, μὴ παχέσι, μηδὲ λίην φαλακροῖσιν, ἀλλὰ προμήκεσι—ταχυπορώτερα γάρ—καὶ τῇ χειρὶ ἐπερείδειν· χρὴ δὲ καὶ διαφανέσι καίειν, ὡς ὅτι τάχιστα περαιωθῇ κατὰ δύναμιν· τὰ γὰρ παχέα βραδέως περαιούμενα πλατυτέρας τὰς ἐκπτώσιας τῶν ἐσχαρέων ποιεῖται, καὶ κίνδυνος ἂν εἴη συῤῥαγῆναι τὰς ὠτειλάς· καὶ κάκιον μὲν οὐδὲν ἂν εἴη, αἴσχιον δὲ καὶ ἀτεχνότερον. ὅταν διακαύσῃς ἐς τὸ πέρην, τῶν μὲν πλείστων ἱκανῶς ἂν ἔχοι ἐν τῷ κάτω μέρει τὰς ἐσχάρας ταύτας μούνας θεῖναι· ἢν δὲ μὴ κίνδυνος φαίνηται εἶναι συῤῥαγῆναι τὰς ὠτειλάς, ἀλλὰ πολὺ τὸ διὰ μέσου ᾖ, ὑπάλειπτρον χρὴ λεπτὸν διέρσαι διὰ τῶν καυμάτων, ἔτι ἀναλελημμένου τοῦ δέρματος, οὐ γὰρ ἂν ἄλλως δύναιο διέρσαι· ἐπὴν δὲ διέρσῃς, ἀφεῖναι τὸ δέρμα, ἔπειτα μεσηγὺ τῶν ἐσχαρῶν ἄλλην

[1] τὰ τοιαῦτα.

liable to dislocation at the top and in front where the head of the humerus forms a prominence, and behind a little away from the top of the shoulder. Now these cauterizations would be properly done if the dislocations of the arm were upwards, forwards or backwards, but, as it is, since the dislocation is downwards, these cauterizations rather bring it about than prevent it, for they shut out the head of the humerus from the space above it.

One should cauterize these cases thus:—Grasp the skin at the armpit between the fingers and draw it in the direction towards which the head of the humerus gets dislocated (*i.e.* downwards), then pass the cautery right through the skin thus drawn away. The cautery irons for this operation should not be thick nor very rounded, but elongated (for so they pass through more quickly), and pressure should be made with the hand. They should be white hot, so that the operation may be completed with all possible speed. For thick irons, since they pass through slowly, leave larger eschars to come away, and there is risk of the cicatrices breaking into one another. This indeed is no great evil, but looks rather bad and shows want of skill. When your cautery has gone right through, these two eschars in the part below will in most cases be sufficient by themselves. But if there seems no risk of the cicatrices breaking into one another, and there is a good interval between them, one should pass a thin spatula through the cautery holes, the skin being still held up, for otherwise you could not pass it. After passing it, let go the skin and then make another eschar between the others with a thin

ἐσχάρην ἐμβάλλειν λεπτῷ σιδηρίῳ, καὶ διακαῦσαι ἄχρις ἂν τῷ ὑπαλείπτρῳ ἐγκύρσῃ. ὁπόσον δέ τι χρὴ τὸ δέρμα τὸ ἀπὸ τῆς μασχάλης ἀπολαμβάνειν, τοισίδε χρὴ τεκμαίρεσθαι· ἀδένες ὕπεισιν ἢ ἐλάσσους ἢ μείζους πᾶσιν ὑπὸ τῇ μασχάλῃ, πολλαχῇ δὲ καὶ ἄλλῃ τοῦ σώματος. ἀλλὰ ἐν ἄλλῳ λόγῳ περὶ ἀδένων οὐλομελίης γεγράψεται, ὅ τι τέ εἰσι, καὶ οἷα ἐν οἵοισι σημαίνουσί τε καὶ δύνανται. τοὺς μὲν οὖν ἀδένας οὐ χρὴ προσαπολαμβάνειν, οὐδ' ὅσα ἐσωτέρω τῶν ἀδένων· μέγας γὰρ ὁ κίνδυνος· τοῖσι γὰρ ἐπικαιροτάτοισι τόνοισι γειτονεύονται· ὅσον δὲ ἐξωτέρω τῶν ἀδένων ἐπὶ[1] πλεῖστον ἀπολαμβάνειν· ἀσινέα γάρ. γινώσκειν δὲ χρὴ καὶ τάδε, ὅτι ἢν μὲν ἰσχυρῶς τὸν βραχίονα ἀνατείνῃς, οὐ δυνήσῃ τοῦ δέρματος ἀπολαβεῖν οὐδὲν τοῦ ὑπὸ τῇ μασχάλῃ, ὅ τι καὶ ἄξιον λόγου· καταναισιμοῦται γὰρ ἐν τῇ ἀνατάσει· οἱ δὲ αὖ τόνοι, οὓς οὐδεμιῇ μηχανῇ δεῖ τιτρώσκειν, οὗτοι πρόχειροι γίνονται καὶ κατατεταμένοι ἐν τούτῳ τῷ σχήματι· ἢν δὲ σμικρὸν ἐπάρῃς τὸν βραχίονα, πολὺ μὲν τοῦ δέρματος ἀπολήψῃ, οἱ δὲ τόνοι ὧν δεῖ προμηθεῖσθαι, ἔσω καὶ πρόσω τοῦ χειρίσματος γίνονται. ἆρ' οὖν οὐκ ἐν πάσῃ τῇ τέχνῃ περὶ παντὸς χρὴ ποιεῖσθαι, τὰ δίκαια σχήματα ἐξευρίσκειν ἐφ' ἑκάστοισι; ταῦτα μὲν τὰ κατὰ τὴν μασχάλην, καὶ ἱκαναὶ αὗται αἱ καταλήψεις, ἢν ὀρθῶς τεθῶσιν αἱ ἐσχάραι. ἔκτοσθεν δὲ τῆς μασχάλης διττὰ μοῦνά ἐστι χωρία, ἵνα ἄν τις ἐσχάρας θείη τιμωρεούσας τῷ παθήματι, μίαν μὲν ἐν τῷ ἔμπροσθεν μεσηγὺ τῆς τε κεφαλῆς τοῦ βραχίονος

[1] ὡς.

cautery, and burn through till you come on to the spatula. The amount of skin that one should take up from the armpit should be estimated thus:—All men have glands, smaller or larger, in the armpit and many other parts of the body.—But the whole structure of glands will be described in another treatise, both what they are, and their signification and function in the parts they occupy.[1]—The glands, then, must not be caught up with the skin, nor any parts internal to the glands. The danger, indeed, is great, for they lie close to cords of the utmost importance. But take up as much as possible of what is superficial to the glands, for that is not dangerous. One should also know the following, namely that if you stretch the arm strongly upwards you cannot take up any part of the skin under the armpit worth mentioning, for it is used up for the extension. The cords, again, which must by no means be wounded, come close to the surface and are on the stretch in this attitude; but if you raise the arm slightly you can take up a good deal of skin, while the cords which are to be guarded lie within, and far from the field of operation. Ought we not then, in all our practice, to consider it of the highest importance to discover the proper attitudes in each case? So much for the parts about the armpit, and these gathers (lit. interceptions) suffice if the eschars are properly placed. Outside the armpit there are only two places where one might put eschars efficacious against the malady; one in front between the head of the humerus and the

[1] The extant treatise on glands is an attempt by a later writer to supply this vacancy. Galen XVIII (1), 379.

καὶ τοῦ τένοντος τοῦ κατὰ τὴν μασχάλην· καὶ ταύτῃ τὸ δέρμα τελέως διακαίειν χρή, βαθύτερον δὲ οὐ χρή· φλέψ τε γὰρ παχείη πλησίη καὶ νεῦρα, ὧν οὐδέτερα θερμαντέα. ὄπισθέν τε αὖ ἄλλην ἐσχάρην ἐνδέχεται ἐνθεῖναι ἀνωτέρω μὲν συχνῷ τοῦ τένοντος τοῦ κατὰ τὴν μασχάλην,
80 κατωτέρω δὲ ὀλίγῳ τῆς κεφαλῆς τοῦ βραχίονος· καὶ τὸ μὲν δέρμα τελέως χρὴ διακαίειν, βαθείην δὲ μηδὲ κάρτα ταύτην ποιεῖν· πολέμιον γὰρ τὸ πῦρ νεύροισιν. ἰητρεύειν μὲν οὖν χρὴ διὰ πάσης τῆς ἰητρείης τὰ ἕλκεα, μηδέποτε ἰσχυρῶς ἀνατείνοντα τὸν βραχίονα, ἀλλὰ μετρίως, ὅσον τῶν ἑλκέων ἐπιμελείης εἵνεκα·—ἧσσον μὲν γὰρ ἂν διαψύχοιτο—συμφέρει γὰρ πάντα τὰ καύματα σκέπειν, ὡς[1] ἐπιεικέως ἰητρεύειν—ἧσσον δ' ἂν ἐκπλίσσοιτο· ἧσσον δ' ἂν αἱμορῥαγοίη· ἧσσον δ'
90 ἂν σπασμὸς ἐπιγένοιτο. ὁπόταν δὲ δὴ καθαρὰ γένηται τὰ ἕλκεα, ἐς ὠτειλάς τε ἴῃ, τότε δὴ καὶ παντάπασι χρὴ αἰεὶ τὸν βραχίονα πρὸς τῇσι πλευρῇσι προσδεδέσθαι, καὶ νύκτα καὶ ἡμέρην· ἀτὰρ καὶ ὁπόταν ὑγιέα γένηται τὰ ἕλκεα, ὁμοίως ἐπὶ πολὺν χρόνον χρὴ προσδεῖν τὸν βραχίονα πρὸς τὰς πλευράς· οὕτω γὰρ ἂν μάλιστα ἐπουλωθείη καὶ ἀποληφθείη ἡ εὐρυχωρίη, καθ' ἣν
98 μάλιστα ὀλισθάνει ὁ βραχίων.

XII. Ὅσοισι δ' ἂν ὦμος κατηπορηθῇ ἐμβληθῆναι, ἢν μὲν ἔτι ἐν αὐξήσει ἔωσιν, οὐκ ἐθέλει συναύξεσθαι τὸ ὀστέον τοῦ βραχίονος ὁμοίως τῷ ὑγιεῖ, ἀλλὰ αὔξεται μὲν ἐπί τι, βραχύτερον δὲ τοῦ ἑτέρου γίνεται· καὶ οἱ καλούμενοι δὲ ἐκ γενεῆς γαλιάγκωνες, διὰ δισσὰς συμφορὰς ταύτας

[1] ὡς καὶ.

tendon at the armpit,[1] and here the cautery should go right through the skin, but no deeper, for there is a large blood vessel in the neighbourhood, and cords, none of which must be heated. Again, another eschar may be placed behind, well above the tendon at the armpit, but a little below the head of the humerus. Burn through the skin completely but do not make this cauterization very deep either, for fire is hostile to nerves. During the whole treatment, the wounds must be dressed without ever lifting the arm up strongly, but only such moderate distance as the care of the wounds requires. They will thus be less exposed to cold—(it is well to cover all burns if they are to be treated properly)—less drawn apart, less liable to haemorrhage, and spasm will be less likely to supervene. When, finally, the wounds get cleansed and begin to cicatrize, then above all should the arm be kept continually bound to the side both night and day, nay, even when the wounds get healed, one should bind the arm to the side in the same way for a long time; for so would the cavity into which the humerus is mostly displaced be best cicatrized up and cut off.

XII. In cases where reduction of the shoulder has failed, if the patients are still adolescent, the bone of the arm will not grow like the sound one. It grows a little indeed, but gets shorter than the other. As to those who are called congenitally weasel-armed[2], they owe this infirmity to two

[1] Pectoralis major tendon.

[2] Strictly weasel-elbowed. Galen in his Lexicon says they have shrivelled upper arms and swollen elbows "like the weasels," but he doubts the derivation. In his Commentary he is still more doubtful, but leaves "those who study such matters" to clear it up, which they have not yet done.

γινονται, ἤν γέ τι τοιοῦτον αὐτοὺς ἐξάρθρημα καταλάβῃ ἐν τῇ γαστρὶ ἐόντας, διά τε ἄλλην[1] συμφορήν, περὶ ἧς ὕστερόν ποτε γεγράψεται· ἀτὰρ καὶ οἷσιν ἔτι νηπίοισιν ἐοῦσι κατὰ τὴν κεφαλὴν τοῦ βραχίονος βαθεῖαι καὶ ὑποβρύχιοι ἐκπυήσιες γίνονται, καὶ οὗτοι πάντες γαλιάγκωνες γίνονται· καὶ ἤν τε τμηθῶσιν, ἤν τε καυθῶσιν, ἤν τε αὐτόματόν σφιν ἐκραγῇ, εὖ εἰδέναι χρὴ ὅτι ταῦτα οὕτως ἔχει. χρῆσθαι μέντοι τῇ χειρὶ δυνατώτατοί[2] εἰσιν οἱ ἐκ γενεῆς γαλιάγκωνες, οὐ μὴν οὐδὲ ἐκεῖνοί γε ἀνατεῖναι παρὰ τὸ οὖς τὸν βραχίονα ἐκτανύσαντες τὸν ἀγκῶνα δύνανται, ἀλλὰ πολὺ ἐνδεεστέρως ἢ τὴν ὑγιέα χεῖρα. οἷσι δ' ἂν ἤδη ἀνδράσιν ἐοῦσιν ἐκπέσῃ ὁ ὦμος καὶ μὴ ἐμβληθῇ, ἡ ἐπωμὶς ἀσαρκοτέρη γίνεται, καὶ ἡ ἔξις λεπτὴ ἡ κατὰ τοῦτο τὸ μέρος· ὅταν μέντοι ὀδυνώμενοι παύσωνται, ὁπόσα μὲν δεῖ ἐργάζεσθαι ἐπαίροντας τὸν ἀγκῶνα ἀπὸ τῶν πλευρέων ἐς τὸ πλάγιον, ταῦτα μὲν οὐ δύνανται ἅπαντα ὁμοίως ἐργάζεσθαι· ὁπόσα δὲ δεῖ ἐργάζεσθαι, παραφέροντας τὸν βραχίονα παρὰ τὰς πλευράς, ἢ ἐς τοὐπίσω ἢ ἐς τοὔμπροσθεν, ταῦτα δὲ δύνανται ἐργάζεσθαι· καὶ γὰρ ἂν ἀρίδα ἑλκύσαιεν[3] καὶ πρίονα, καὶ πελεκήσαιεν ἄν, καὶ σκάψαιεν ἄν, μὴ κάρτα ἄνω αἴροντες τὸν ἀγκῶνα, καὶ τἆλλα ὅσα ἐκ τῶν τοιούτων σχημάτων ἐργάζονται.

XIII. Ὅσοισι δ' ἂν τὸ ἀκρώμιον ἀποσπασθῇ, τούτοισι φαίνεται ἐξέχον τὸ ὀστέον τὸ ἀπεσπασμένον· ἔστι δὲ τοῦτο ὁ σύνδεσμος τῆς κληῖδος καὶ τῆς ὠμοπλάτης· ἑτεροίη γὰρ ἡ φύσις

[1] ἑτέρην. [2] δυνατώτεροι.

separate causes. Either a dislocation of this kind has befallen them in the womb, or another accident which will be described somewhat later;[1] so, too, those in whom deep suppuration bathing the head of the humerus occurs while they are still children all become weasel-armed. And whether they are operated on by the knife or cautery, or the abscess breaks of itself, be sure that this will be the result. Still, those who are congenitally weasel-armed are quite able to use the arm, though they, too, cannot stretch the arm up by the ear with the elbow extended, but to a much less extent than the sound one. In adults, when the shoulder is dislocated and not reduced, its point is less fleshy than usual and this part assumes a lean habit. Still, when they cease to suffer pain, though as regards all such work as requires raising the elbow outwards from the side they are unable to do it as before, any work such as involves moving the arm either backwards or forwards along the side they can execute. For they might work a bow-drill[2] or saw,—and might use pick or spade without much raising of the elbow, and so with all other works which are done in such attitudes.

XIII. In cases of avulsion of the acromion, the bone torn off makes an obvious projection. This bone is the bond between the clavicle and the shoulder-blade, for man's structure is here diverse

[1] As Galen remarks, if we deduct the dislocation and the disease from the two causes, it is difficult to see what remains.

[2] "File" most translators, "auger" Adams, but the *ἀρίς* was used to work the trephine. See Oribasius, XLVI. ii.

[3] ἑλκύσειαν . . . πελεκήσειαν . . . σκάψειαν. Κω.

ἀνθρώπου ταύτῃ ἢ τῶν ἄλλων ζώων· οἱ οὖν ἰητροὶ μάλιστα ἐξαπατῶνται ἐν τούτῳ τῷ τρώματι—ἅτε γὰρ ἀνασχόντος τοῦ ὀστέου τοῦ ἀποσπασθέντος, ἡ ἐπωμὶς φαίνεται χαμαιζήλη καὶ κοίλη—ὥστε[1] καὶ προμηθεῖσθαι τῶν ὤμων τῶν ἐκπεπτωκότων. πολλοὺς οὖν οἶδα ἰητροὺς τἄλλα οὐ φλαύρους ἐόντας, οἳ πολλὰ ἤδη ἐλυμήναντο, ἐμβάλλειν πειρώμενοι τοὺς τοιούτους ὤμους, οὕτως οἰόμενοι ἐκπεπτωκέναι, καὶ οὐ πρόσθεν παύονται πρὶν ἢ ἀπογνῶναι ἢ ἀπορῆσαι, δοκοῦντες αὐτοὶ σφέας αὐτοὺς ἐμβάλλειν τὸν ὦμον. τούτοισιν ἰητρείη μέν, ἥπερ καὶ τοῖσιν ἄλλοισιν τοῖσι τοιούτοισι, κηρωτὴ καὶ σπλῆνες καὶ ὀθόνια, καὶ ἐπίδεσις τοιαύτη. καταναγκάζειν μέντοι τὸ ὑπερέχον χρή, καὶ τοὺς σπλῆνας κατὰ τοῦτο τιθέναι πλείστους, καὶ πιέζειν ταύτῃ μάλιστα, καὶ τὸν βραχίονα πρὸς τῇσι πλευρῇσι προσηρτημένον ἐς τὸ ἄνω μέρος ἔχειν, οὕτω γὰρ ἂν μάλιστα πλησιάζοι τὸ ἀπεσπασμένον. τάδε μὲν εὖ εἰδέναι χρή, καὶ προλέγειν ὡς ἀσφαλέα, εἰ ἄλλως ἐθέλεις, ὅτι βλάβη μὲν οὐδεμίη, οὔτε σμικρὴ οὔτε μεγάλη, τῷ ὤμῳ γίνεται ἀπὸ τούτου τοῦ τρώματος, αἴσχιον δὲ τὸ χωρίον· οὐδὲ γὰρ τοῦτο τὸ ὀστέον ἐς τὴν ἀρχαίην ἕδρην ὁμοίως ἂν ἱδρυνθείη, ὥσπερ ἐπιπέφυκεν,[2] ἀλλ' ἀνάγκη πλέον ἢ ἔλασσον ὀγκηρότερον εἶναι ἐς τὸ ἄνω. οὐδὲ γὰρ ἄλλο ὀστέον οὐδὲν ἐς τωὐτὸ καθίσταται ὅ τι ἂν κοινωνέον ᾖ ἑτέρῳ ὀστέῳ καὶ προσπεφυκὸς ἀποσπασθῇ ἀπὸ τῆς ἀρχαίης φύσιος. ἀνώδυνόν

[1] ὥσπερ τῶν ὤμων.
[2] ὡς ἐπεφύκει.

from that of animals. Thus practitioners are especially deceived by this injury—since, the detached bone being raised up, the point of the shoulder looks depressed and hollow—even to the extent of treating the patients for dislocated shoulders.[1] I know many otherwise excellent practitioners who have done much damage in attempting to reduce shoulders of this kind, which they thought were dislocated: and who did not cease their efforts till they recognised either their error or their impotence if they still supposed they were reducing the shoulder-joint. The treatment in these, as in other like cases, consists of cerate, compresses, bandages and the like mode of dressing. The projecting part however should be forced down, the bulk of the compresses placed over it and strongest pressure made here. Also the arm should be fixed to the ribs and kept up, for so it will best be brought near the part torn off. For the rest, keep well in mind and predict with assurance, if you think proper, that no harm, small or great, happens to the shoulder from this injury, but the part will be deformed. This bone, in fact, cannot be fixed in its old natural position as it was, but there will necessarily be more or less of a tuberosity on the top. Nor, indeed, is any bone brought back to the same place, if, after forming an annex or outgrowth of another bone, it has been torn away from its old natural position.

[1] "Looks hollow" as when the shoulders are dislocated, (Kw.'s reading).

τε τὸ ἀκρώμιον ἐν ὀλίγῃσιν ἡμέρῃσι γίνεται, ἢν χρηστῶς ἐπιδέηται.

XIV. Κλὴις δὲ κατεαγεῖσα, ἢν μὲν ἀτρεκέως ἀποκαυλισθῇ, εὐϊητοτέρη ἐστίν· ἢν δὲ παραμηκέως, δυσιητοτέρη. τἀναντία δὲ τούτοισίν ἐστιν ἢ ὡς ἄν τις οἴοιτο, τὴν μὲν γὰρ ἀτρεκέως ἀποκαυλισθεῖσαν προσαναγκάσειεν[1] ἄν τις μᾶλλον ἐς τὴν φύσιν ἐλθεῖν· καὶ γὰρ εἰ πάνυ προμηθηθείη, τὸ ἀνωτέρω κατωτέρω ἂν ποιήσειε σχήμασί τε ἐπιτηδείοισι καὶ ἐπιδέσει ἁρμοζούσῃ· εἰ δὲ μὴ τελέως ἰδρυνθείη, ἀλλ' οὖν τὸ ὑπερέχον γε τοῦ ὀστέου οὐ κάρτα ὀξὺ γίνεται· ὧν δ' ἂν παραμηκὲς τὸ ὀστέον κατεαγῇ, ἰκέλη ἡ συμφορὴ γίνεται τοῖσιν ὀστέοισι τοῖσι ἀπεσπασμένοισι, περὶ ὧν πρόσθεν γέγραπται· οὔτε γὰρ ἰδρυνθῆναι αὐτὸ πρὸς ἑωυτὸ κάρτα ἐθέλει, ἥ τε ὑπερέχουσα ὄκρις τοῦ ὀστέου ὀξείη γίνεται κάρτα. τὸ μὲν οὖν σύμπαν, εἰδέναι χρὴ ὅτι βλάβη οὐδεμίη τῷ ὤμῳ οὐδὲ τῷ ἄλλῳ σώματι γίνεται διὰ τὴν κάτηξιν τῆς κληῖδος, ἢν μὴ ἐπισφακελίσῃ· ὀλιγάκις δὲ τοῦτο γίνεται. αἰσχός γε μὴν προσγίνεται περὶ τὴν κάτηξιν τῆς κληῖδος, καὶ τούτοισι τὸ πρῶτον αἴσχιστον, ἔπειτα μὴν ἐπὶ ἧσσον γίνεται. συμφύεται δὲ ταχέως κλὴις καὶ τἆλλα πάντα ὅσα χαῦνα ὀστέα· ταχείην γὰρ τὴν ἐπιπώρωσιν ποιεῖται τὰ τοιαῦτα. ὅταν μὲν οὖν νεωστὶ κατεαγῇ, οἱ τετρωμένοι σπουδάζουσι, οἰόμενοι μέζον τὸ κακὸν εἶναι ἢ ὅσον ἐστίν· οἵ τε ἰητροὶ προθυμέονται δῆθεν

[1] προσαναγκάζοι.

[1] This is probably dislocation of the clavicle at the outer end. The anatomy of the part was imperfectly understood

The acromion becomes painless in a few days, if it is properly bandaged.[1]

XIV. A fractured collar-bone is more easily treated if broken straight across; but if fractured obliquely, treatment is more difficult. In these cases matters are the reverse of what one would expect. For one will more readily force a collar-bone fractured straight across into its natural position, and by thoroughly careful treatment will succeed in adjusting the upper to the lower fragment by appropriate attitudes and suitable bandaging. And should it not be completely reduced, at least the projection of bone will not be very pointed. But those in whom the bone is fractured obliquely suffer an accident like the avulsions of bones described above; for the fracture hardly lends itself to reduction, and the projecting ridge of bone becomes very sharp. Still, when all is said, one must bear in mind that no harm happens to the shoulder, or body generally, from a fractured collar-bone, unless necrosis supervenes, and this rarely happens. Deformity, it is true, accompanies fracture of the clavicle, and this is very marked at first, but afterwards gets less. The collar-bone unites quickly, as do all spongy bones, for with such the formation of callus is rapid. Thus, when the fracture is recent, patients take it seriously, thinking the damage is worse than it is, and practitioners on their side are careful in applying proper treatment;

even in Galen's time, some saying that the acromion was a distinct bone found only in man; while others thought there was a third bone or cartilage between the clavicle and acromion. The accident occurred to Galen when 35 years old, and he relates vividly how it was first mistaken for a dislocated shoulder, and how, by forty days' endurance of tight bandaging, he recovered without any deformity.

ὀρθῶς ἰῆσθαι· προϊόντος δὲ τοῦ χρόνου οἱ τετρωμένοι, ἅτε οὐκ ὀδυνώμενοι οὐδὲ κωλυόμενοι οὔτε ὁδοιπορίης οὔτε ἐδωδῆς, καταμελέουσι· οἵ τε αὖ ἰητροί, ἅτε οὐ δυνάμενοι καλὰ τὰ χωρία ἀποδεικνύναι, ὑπαποδιδράσκουσι, καὶ οὐκ ἄχθονται τῇ ἀμελείῃ τῶν τετρωμένων· ἐν τούτῳ τε ἡ ἐπιπώρωσις συνταχύνεται.

Ἐπιδέσιος μὲν οὖν τρόπος καθέστηκε παραπλήσιος τοῖσι πλείστοισι κηρωτῇ καὶ σπλήνεσι καὶ ὀθονίοισι μαλθακοῖσιν ἰητρεύειν· καὶ τάδε δεῖ προσιητρεύειν, καὶ τάδε δεῖ προσσυνιέναι καὶ μάλιστα ἐν τούτῳ τῷ χειρίσματι, ὅτι τούς τε σπλῆνας πλείστους κατὰ τὸ ἐξέχον χρὴ τιθέναι, καὶ τοῖσι ἐπιδέσμοισι πλείστοισι καὶ μάλιστα κατὰ τοῦτο χρὴ πιέζειν. εἰσὶ δὲ δή τινες, οἳ ἐπεσοφίσαντο ἤδη μολύβδιον βαρὺ προσεπικαταδεῖν, ὡς καταναγκάζοι[1] τὸ ὑπερέχον· συνιᾶσι μὲν οὖν ἴσως οὐδὲ οἱ ἁπλῶς ἐπιδέοντες· ἀτὰρ δὴ οὐδ' οὗτος ὁ τρόπος κληῖδος κατήξιός ἐστιν· οὐ γὰρ δυνατὸν τὸ ὑπερέχον καταναγκάζεσθαι οὐδέν ὅ τι ἄξιον λόγου. ἄλλοι δ' αὖ τινές εἰσιν, οἵτινες, καταμαθόντες τοῦτο, ὅτι αὗται αἱ ἐπιδέσιες παράφοροί εἰσι καὶ οὐ κατὰ φύσιν καταναγκάζουσι τὰ ὑπερέχοντα, ἐπιδέουσι μὲν οὖν αὐτοὺς σπλήνεσι καὶ ὀθονίοισι χρεώμενοι, ὥσπερ καὶ οἱ ἄλλοι· ζώσαντες δὲ τὸν ἄνθρωπον ταινίῃ τινί, ᾗ εὐζωστότατος αὐτὸς ἑωυτοῦ ἐστίν, ὅταν ἐπιθέωσι τοὺς σπλῆνας ἐπὶ τὰ ὑπερέχοντα τοῦ κατήγματος, ἐξογκώσαντες ἐπὶ τὰ ἐξέχοντα, τὴν ἀρχὴν τοῦ ὀθονίου προσέδησαν πρὸς τὸ ζῶσμα ἐκ τοῦ ἔμπροσθεν, καὶ οὕτως ἐπιδέουσιν, ἐπὶ τὴν ἴξιν τῆς κληῖδος ἐπιτανύοντες, ἐς τοὔπισθεν ἄγοντες·

but as time goes on the patients, since they feel no pain and are not hindered either in getting about or eating, neglect the matter, and physicians too, since they cannot make the parts look well, withdraw gradually, and are not displeased by the patients' carelessness, and meanwhile the callus formation quickly develops.

Now, the established mode of treatment is like that used for most fractures, cerate, compresses, and soft bandages; also the following extra treatment is required, and it must be kept in mind especially in handling this injury that one should put the bulk of the compresses on the projecting part and apply pressure with most of the bandages, especially at this point. There are some, indeed, who in their wisdom have contrived something further and bind on a heavy piece of lead as well, so as to press down the projection. Perhaps those who use a simple bandage are no wiser, yet after all, this is not a suitable plan for a fractured collar-bone, for the projecting part cannot be pressed down to any extent worth mentioning. Again, there are certain others, who, recognizing a tendency to slip in these dressings and their inability to press down the projecting parts in a natural way, use compresses and bandages like the rest, but gird the patient with a belt at the most suitable part of his body. Then they put compresses on the part of the fracture that sticks up, piling them on to the projection, fix the end of the bandage to the belt in front and apply by stretching it vertically over the collar-bone and bringing it to the back. Then,

[1] καταναγκάζειν.

κἄπειτα περιβάλλοντες περὶ τὸ ζῶσμα, ἐς τοὔμ-
προσθεν ἄγουσι, καὶ αὖθις ἐς τοὔπισθεν. οἱ δέ
τινες οὐχὶ περὶ τὸ ζῶσμα περιβάλλουσι τὸ
ὀθόνιον, ἀλλὰ περὶ τὸν περίναιόν τε καὶ παρ'
αὐτὴν τὴν ἕδρην καὶ παρὰ τὴν ἄκανθαν κυκλεύ-
οντες τὸ ὀθόνιον, οὕτω πιέζουσι τὸ κάτηγμα.
ταῦτα γοῦν ἀπείρῳ μὲν ἀκοῦσαι φαίνεται ἐγγύς
τι τοῦ κατὰ φύσιν εἶναι, χρεομένῳ δὲ ἄχρηστα·
οὔτε γὰρ μόνιμα οὐδένα χρόνον, οὐδ' εἰ κατα-
κέοιτό τις—καίτοι ἐγγυτάτω ἂν οὕτως—ἀλλ'
ὅμως, εἰ καὶ κατακείμενος ἢ τὸ σκέλος συγκάμ-
ψειεν ἢ αὐτὸς καμφθείη, πάντα ἂν τὰ ἐπιδέσ-
ματα κινέοιτο· ἄλλως τε ἀσηρὴ ἡ ἐπίδεσις· ἥ τε
γὰρ ἕδρη ἀπολαμβάνεται, ἀθρόα τε τὰ ὀθόνια ἐν
ταύτῃ τῇ στενοχωρίῃ γίνεται· τά τε αὖ περὶ τὴν
ζώνην περιβαλλόμενα οὐχ οὕτως ἰσχυρῶς ἕζωσ-
ται, ὡς οὐκ ἀναγκάσαι ἐς τὸ ἄνω τὴν ζώνην
ἐπανιέναι, καὶ οὕτως ἀνάγκη ἂν εἴη χαλᾶν [1] τὰ
ἐπιδέσματα. ἄγχιστα δ' ἄν τις δοκέοι ποιεῖν,
καίπερ οὐ μεγάλα ποιῶν, εἰ τοῖσι μέν τισι τῶν
ὀθονίων περὶ τὴν ζώνην περιβάλλοι, τοῖσι δὲ
πλείστοισι τῶν ὀθονίων τὴν ἀρχαίην ἐπίδεσιν
ἐπιδέοι· οὕτω γὰρ ἂν μάλιστα τὰ ἐπιδέσματα
μόνιμά τε εἴη καὶ ἀλλήλοισι τιμωρέοι.

Τὰ μὲν οὖν πλεῖστα εἴρηται, ἄσσα καταλαμ-
βάνει τοὺς τὴν κληῖδα καταγνυμένους. προσ-
συνιέναι δὲ τόδε χρή, ὅτι κληὶς ὡς ἐπιτοπολὺ
κατάγνυται, ὥστε τὸ μὲν ἀπὸ τοῦ στήθεος
πεφυκὸς ὀστέον ἐς τὸ ἄνω μέρος ὑπερέχειν, τὸ δὲ
ἀπὸ τῆς ἀκρωμίης ἐν τῷ κάτω μέρει εἶναι. αἴτια
δὲ τούτων τάδε, ὅτι τὸ μὲν στῆθος οὔτε κατωτέρω
ἂν πολὺ οὔτε ἀνωτέρω χωρήσειεν· σμικρὸς γὰρ ὁ

passing it through the belt, they bring it to the front and again to the back. There are others who pass the bandage, not through a belt, but round the perineum near the fundament itself, and, completing the circle along the spine, thus make pressure on the fracture. To an inexperienced person these methods seem to come near the natural, but to one who uses them useless; for they have no permanent stability, not even if the patient keeps his bed, though this would come nearest. Yet even if, when recumbent, he bends his leg or curves his body all the bandages will be deranged. Besides the dressing is troublesome, for the fundament is included, and all the bandages accumulate in this narrow part, while, as for those passed through the belt, it is impossible to gird it so tightly as not to yield to the force pulling upwards, and so the bandages will necessarily become lax. One would appear to be most effective, though without effecting much, by making some turns of bandage through the belt while applying most in the old fashion,[1] for so the bandages would best keep in place and support one another.

Almost all then has been said on the subject of patients with broken collar-bones; but the following should also be borne in mind, namely, that the clavicle as a rule is so fractured that the part arising from the breast-bone is on the top and that from the shoulder-point (acromion) below. The reason of this is as follows: the breast-bone does not move much either downwards or upwards, for the range of the joint at

[1] Some make ἀρχαίην ἐπίδεσιν = the under bandage, first applied, but cf. ἀρχαίη φύσις = νομίμη, XIII. 33.

[1] πάντα χαλᾶν.

κιγκλισμὸς τοῦ ἄρθρου τοῦ ἐν τῷ στήθει. αὐτό τε γὰρ ἑωυτὸ συνεχές ἐστι τὸ στῆθος καὶ τῇ ῥάχει· ἄγχιστα μὴν ἡ κληὶς πρὸς τὸ τοῦ ὤμου ἄρθρον πλοώδης ἐστίν· ἠνάγκασται γὰρ πυκινοκίνητος εἶναι διὰ τὴν τῆς ἀκρωμίης σύζευξιν. ἄλλως τε ὅταν τρωθῇ, φεύγει ἐς τὸ ἄνω μέρος τὸ πρὸς τῷ στήθει προσεχόμενον, καὶ οὐ μάλα ἐς τὸ κάτω μέρος ἀναγκάζεσθαι ἐθέλει· καὶ γὰρ πέφυκε κοῦφον,[1] καὶ ἡ εὐρυχωρίη αὐτῷ ἄνω πλείων ἢ κάτω. ὁ δὲ ὦμος καὶ ὁ βραχίων καὶ τὰ προσηρτημένα τούτοισιν εὐαπόλυτά ἐστιν ἀπὸ τῶν πλευρέων καὶ τοῦ στήθεος, καὶ διὰ τοῦτο δύναται καὶ ἀνωτέρω πολὺ ἀνάγεσθαι καὶ κατωτέρω· ὅταν οὖν κατεαγῇ ἡ κληίς, τὸ πρὸς τῷ ὤμῳ ὀστέον ἐς τὸ κατωτέρω ἐπιῤῥέπει· ἐς τοῦτο γὰρ ἐπιτροχώτερον αὐτὸ ἅμα τῷ ὤμῳ καὶ τῷ βραχίονι κάτω ῥέψαι μᾶλλον ἢ ἐς τὸ ἄνω. ὁπότε οὖν ταῦτα τοιαῦτά ἐστιν, ἀσυνετέουσιν ὅσοι τὸ ὑπέρεχον τοῦ ὀστέου ἐς τὸ κάτω καταναγκάσαι οἴονται οἷόν τε εἶναι. ἀλλὰ δῆλον ὅτι τὰ κάτω πρὸς τὸ ἄνω προσακτέον ἐστίν· τοῦτο γὰρ ἔχει κίνησιν, τοῦτο γάρ ἐστιν καὶ τὸ ἀποστὰν ἀπὸ τῆς φύσιος. δῆλον οὖν ὅτι ἄλλως μὲν οὐδαμῶς ἔστιν ἀναγκάσαι τοῦτο—αἵ τε γὰρ ἐπιδέσιες οὐδέν τι μᾶλλον προσαναγκάζουσιν ἢ ἀπαναγκάζουσιν—εἰ δέ τις τὸν βραχίονα πρὸς τῇσι πλευρῇσι ἐόντα ἀναγκάζοι ὡς μάλιστα ἄνω, ὡς ὅτι ὀξύτατος ὁ ὦμος φαίνηται[3] εἶναι, δῆλον ὅτι οὕτως ἂν ἁρμοσθείη πρὸς τὸ ὀστέον τὸ ἀπὸ τοῦ στήθεος πεφυκός, ὅθεν ἀπεσπάσθη. εἰ οὖν τις τῇ μὲν ἐπιδέσει χρέοιτο τῇ νομίμῃ τοῦ ταχέως

[1] λορδόν.

the sternum is slight and there is continuous connexion between the breast-bone and the spine, but the clavicle on the side of its connexion with the shoulder is especially[1] loose, for it has to have great freedom of movement owing to the acromial junction. Besides, when it is fractured, the part adherent to the breast-bone flies upwards, and can hardly be pressed down, for it is naturally light and there is a larger vacancy for it above than below. But the shoulder, upper arm and parts annexed are easily separated from the ribs and breast-bone and therefore can be moved through a large space upwards and downwards. Thus, when the collar-bone is broken, the part towards the shoulder sinks downwards, for with the shoulder and arm it is more readily disposed to move down than upwards. So whenever this state of things occurs, they are unintelligent who think it possible to press the projecting part of the bone downwards; while it is obvious that one must bring the lower part up, for this is the moveable part, and this too is the one out of its natural place. It is obvious then that other methods are useless in reducing this fracture —for bandagings are no more likely to bring the parts together than to separate them—but if one presses the arm upwards as much as possible, keeping it to the side, so that the shoulder appears very pointed, it is clear that the fragment will thus be brought into connexion with the bone arising from the sternum from which it was torn. If, then, one should use the ordinary dressing for the sake of

[1] Erotian refers twice to this use of ἄγχιστα = μάλιστα.

[a] φαίνεται, Galen. M.

συναλθεσθῆναι εἶνεκα, ἡγήσαιτο ἂν τἄλλα πάντα μάτην εἶναι παρὰ τὸ σχῆμα τὸ εἰρημένον, ὀρθῶς τε ἂν συνίοι, ἰητρεύοι τε ἂν τάχιστα καὶ κάλλιστα. κατακεῖσθαι μέντοι τὸν ἄνθρωπον μέγα τὸ[1] διάφορόν ἐστιν· καὶ ἡμέραι ἱκαναὶ τεσσαρεσ-
127 καίδεκα, εἰ ἀτρεμέοι, εἴκοσι δὲ πάμπολλαι.

XV. Εἰ μέντοι τινὶ ἐπὶ τἀναντία ἡ κλὶς κατεαγείη, ὃ οὐ μάλα γίνεται, ὥστε τὸ μὲν ἀπὸ τοῦ στήθεος ὀστέον ὑποδεδυκέναι, τὸ δὲ ἀπὸ τῆς ἀκρωμίης ὀστέον ὑπερέχειν καὶ ἐποχεῖσθαι ἐπὶ τοῦ ἑτέρου, οὐδεμιῆς μεγάλης ἰητρείης ταῦτά γ' ἂν δέοιτο· αὐτὸς γὰρ ὁ ὦμος ἀφιέμενος καὶ ὁ βραχίων ἰδρύοι ἂν τὰ ὀστέα πρὸς ἄλληλα, καὶ φαύλη ἄν τις ἐπίδεσις ἀρκέοι, καὶ ὀλίγαι ἡμέραι
9 τῆς πωρώσιος γενοίατ' ἄν.

XVI. Εἰ δὲ μὴ κατεαγείη μὲν οὕτως, παρολισθάνοι δὲ ἐς τὸ πλάγιον ἢ τῇ ἢ τῇ, ἐς τὴν φύσιν μὲν ἀπαγαγεῖν ἂν δέοι, ἀναγαγόντα τὸν ὦμον σὺν τῷ βραχίονι, ὥσπερ καὶ πρόσθεν εἴρηται· ὅταν δὲ ἴζηται ἐς τὴν ἀρχαίην φύσιν, ταχείη ἂν ἡ ἄλλη ἰητρείη εἴη. τὰ μὲν οὖν πλεῖστα τῶν παραλλαγμάτων κατορθοῖ αὐτὸς ὁ βραχίων, ἀναγκαζόμενος πρὸς τὰ ἄνω. ὅσα δὲ ἐκ τῶν ἄνωθεν παρολισθάνοντα ἐς τὸ πλάγιον
10 ἦλθεν, ἢ ἐς τὸ κατωτέρω, συμπορσύνοι ἂν τὴν κατόρθωσιν, εἰ ὁ μὲν ἄνθρωπος ὕπτιος κέοιτο, κατὰ δὲ τὸ μεσηγὺ τῶν ὠμοπλατέων ὑψηλότερόν τι ὀλίγῳ ὑποκέοιτο, ὡς περιῤῥηδὲς ᾖ τὸ στῆθος ὡς μάλιστα· καὶ τὸν βραχίονα εἰ ἀνάγοι τις παρὰ τὰς πλευρὰς παρατεταμένον, ὁ δὲ ἰητρὸς τῇ μὲν ἑτέρῃ χειρὶ ἐς τὴν κεφαλὴν τοῦ βραχίονος ἐμβαλὼν τὸ θέναρ τῆς χειρὸς ἀπωθέοι, τῇ δὲ

getting a quick cure, and should consider everything else of no importance compared with the attitude described, his opinion would be right and his treatment most correct and speedy. Still, it makes a great difference if the patient lies down, and fourteen days suffice if he keeps at rest, while twenty are very many.

XV. If, however, a man has his collar-bone broken in the opposite way, which rarely happens—so that the thoracic fragment is underneath and the acromial part projects and overrides the other—no complicated treatment will be required here, for the shoulder and arm left to themselves will bring the fragments together. Any ordinary dressing will suffice, and callus will form in a few days.

XVI. If the fracture is not of this kind, but the displacement is to one side or the other, one must reduce it to its natural position by elevating the shoulder and arm as described before, and when it is set in its old natural place the rest of the cure will be rapid. Most lateral displacements are corrected by the arm itself when pressed upwards, but in cases where the upper (sternal)[1] fragment is displaced laterally or downwards adjustment will be favoured by the patient lying flat on his back with some slightly elevated support between the shoulders, so that the chest falls away as much as possible at the sides. Let an assistant push the arm, kept stretched along the side, upwards, while the practitioner with one hand on the head of the humerus presses it back with his palm, and with the other adjusts the

[1] So Galen.

ἑτέρῃ τὰ ὀστέα τὰ κατεηγότα εὐθετίζοι, οὕτως ἂν μάλιστα ἐς τὴν φύσιν ἄγοι· ἀτάρ, ὥσπερ ἤδη εἴρηται, εὖ[1] μάλα τὸ ἄνωθεν ὀστέον ἐς τὸ κάτω φιλεῖ ὑποδύνειν. τοῖσι μὲν οὖν πλείστοισιν, ὅταν ἐπιδεθῶσι, τὸ σχῆμα ἀρήγει, παρ' αὐτὰς τὰς πλευρὰς τὸν ἀγκῶνα ἔχοντα οὕτως ἐς τὸ ἄνω τὸν ὦμον ἀναγκάζεσθαι· ἔστι δὲ οἷσι μὲν τὸν ὦμον ἀναγκάζειν δεῖ ἐς τὸ ἄνω, ὡς εἴρηται, τὸν δὲ ἀγκῶνα πρὸς τὸ στῆθος παράγειν, ἄκρην δὲ τὴν χεῖρα παρὰ τὸ ἀκρώμιον τοῦ ὑγιέος ὤμου ἴσχειν. ἢν μὲν οὖν κατακεῖσθαι τολμᾷ, ἀντιστήριγμά τι προστιθέναι χρή, ὡς ἂν ὁ ὦμος ἀνωτάτω ᾖ· ἢν δὲ περιΐῃ, σφενδόνην χρὴ ἐκ ταινίης περὶ τὸ ὀξὺ τοῦ ἀγκῶνος ποιήσαντα ἀναλαμβάνειν περὶ τὸν αὐχένα.

XVII. Ἀγκῶνος δὲ ἄρθρον παράλλαξαν μὲν ἢ παραρθρῆσαν πρὸς πλευρὴν ἢ ἔξω, μένοντος τοῦ ὀξέος τοῦ ἐν τῷ κοίλῳ τοῦ βραχίονος, ἐς εὐθὺ κατατείναντα, τὸ ἐξέχον ἀπωθεῖν ὀπίσω καὶ ἐς τὸ πλάγιον.

XVIII. Τὰ δὲ τελέως ἐκβάντα ἢ ἔνθα ἢ ἔνθα, κατάτασις μέν, ἐν ᾗ ὁ βραχίων κατεαγεὶς ἐπιδεῖται· οὕτω γὰρ ἂν τὸ καμπύλον τοῦ ἀγκῶνος οὐ κωλύσει. ἐκπίπτει δὲ μάλιστα ἐς τὸ πρὸς πλευρὰς[2] μέρος. τὰς δὲ κατορθώσιας, ἀπάγοντα ὅτι πλεῖστον, ὡς μὴ ψαύῃ τῆς κορώνης ἡ κεφαλή, μετέωρον περιάγειν καὶ περικάμπτειν,[3] καὶ μὴ ἐς

[1] οὐ Littré, Erm., Kw. [2] πλευρὴν. [3] περικάμψαι.

[1] Reading οὐ. εὖ (Galen, Pq, and all MSS.) would accentu-

broken bones; in this way one will best bring them to the natural position; but as was said before the upper (sternal) fragment is not[1] much wont to be displaced downwards.[2] In most cases, the position after bandaging with the elbow to the side suffices to keep the shoulder up, but in some it is necessary to press the shoulder up as described, bring the elbow towards the chest and fix the hand at the point of the sound shoulder. If, then, the patient brings himself to lie down one should supply a prop to keep the shoulder as far up as possible, but if he goes about one should suspend the part by a sling bandage round the neck to include the point of the elbow.

XVII.[3] (Subluxation of the radius.) When there is displacement or subluxation of the elbow-joint towards the side or outwards, the point (olecranon) in the cavity of the humerus retaining its position, make direct extension and push the projecting part obliquely backwards.[4]

XVIII. Complete dislocations of the elbow in either direction require extension in the position in which a fractured humerus is bandaged; for so the curved part of the elbow will not get in the way. The usual dislocation is that towards the ribs.[4] For adjustment separate the bones as much as possible so that the head (of the humerus) may not hit the coronoid process, keep it up and use movements of circumduction and flexion, and do not force it back

ate the statement that the sternal fragment may be displaced downwards.

[2] Or, following Pq and the MSS., "the upper fragment may very well be displaced downwards."

[3] For the sources of XVII—XXIX see Introduction, p. 86.

[4] = our forearm backwards, cf. *Fractures* XLI.

εὐθὺ βιάζεσθαι, ἅμα δὲ ὠθεῖν τἀναντία ἐφ' ἑκάτερα καὶ παρωθεῖν ἐς χώρην· συνωφελοίη
10 δ' ἂν καὶ ἐπίστρεψις ἀγκῶνος ἐν τούτοισιν, ἐν τῷ μὲν ἐς τὸ ὕπτιον, ἐν τῷ δὲ ἐς τὸ πρηνές. ἴησις δέ, σχήματος μέν, ὀλίγῳ ἀνωτέρω ἄκρην τὴν χεῖρα τοῦ ἀγκῶνος ἔχειν, βραχίονα κατὰ πλευράς· οὕτω δὲ καὶ ἀνάληψις καὶ θέσις· καὶ εὔφορον καὶ φύσις, καὶ χρῆσις ἐν τῷ κοινῷ, ἢν ἄρα μὴ κακῶς πωρωθῇ· πωροῦται δὲ ταχέως. ἴησις δὲ ὀθονίοισι κατὰ τὸν νόμον τὸν ἀρθριτικόν,[1]
18 καὶ τὸ ὀξὺ προσεπιδεῖν.

XIX. Παλιγκοτώτατον δὲ ὁ ἀγκὼν πυρετοῖσιν, ὀδύνῃσιν, ἀσώδει, ἀκρητοχόλῳ, ἀγκῶνος δὲ μάλιστα τοὐπίσω διὰ τὸ ναρκῶδες, δεύτερον δὲ τοὔμπροσθεν. ἴησις δὲ ἡ αὐτή· ἐμβολαὶ δέ, τοῦ μὲν ὀπίσω, ἐκτείναντα κατατεῖναι. σημεῖον δέ· οὐ γὰρ δύνανται ἐκτείνειν· τοῦ δὲ ἔμπροσθεν, οὐ δύνανται συγκάμπτειν. τούτῳ δὲ ἐνθέντα τι συνειλιγμένον σκληρόν, περὶ τοῦτο συγκάμψαι
9 ἐξ ἐκτάσιος ἐξαίφνης.

XX. Διαστάσιος δὲ ὀστέων σημεῖον, κατὰ τὴν φλέβα τὴν κατὰ βραχίονα σχιζομένην δια-
3 ψαύοντι.

XXI. Ταῦτα δὲ ταχέως διαπωροῦται· ἐκ γενεῆς δὲ βραχύτερα τὰ κάτω τοῦ σίνεος ὀστέα, πλεῖστον τὰ ἐγγύτατα τοῦ πήχεος· δεύτερον χειρός· τρίτον δακτύλων· βραχίων δὲ καὶ ὦμος,

[1] Cf. *Fract.* XLVIII.

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[1] "Evidently complete lateral luxation of the forearm," Adams.

[2] Our "external lateral."

[3] Internal lateral, but Adams "forwards or backwards.'

in a straight line, but at the same time press on the two bones in opposite directions and bring them round into place. In these cases turning of the elbow sometimes towards supination, sometimes towards pronation will contribute to success. For after treatment, as regards position, keep the hand rather higher than the elbow, and the arm to the side: this applies both to suspension and fixation. The position is easy and natural and serves for ordinary use, if indeed the ankylosis [stiffening of the joint] is not unfavourable; but ankylosis comes on quickly. Treatment with bandages according to what is customary with joints; and include the point of the elbow in the bandaging.[1]

XIX. Elbow injury is very liable to exacerbation with fever, pain, nausea and bilious vomiting, especially the dislocation backwards[2] owing to the numbness [injury of the ulnar nerve], and secondly dislocation forwards.[3] Treatment is the same. Modes of reduction—for backward dislocation, extension and counter-extension: sign—they cannot extend the arm, while in dislocation forward they cannot flex it. In this case, when something rolled up hard has been put in the bend of the elbow, flex the arm suddenly upon it after extension.

XX. Separation of the bones (of the forearm) is recognised by palpation at the point where the blood vessel of the upper arm bifurcates.

XXI. In these cases there is rapid and complete ankylosis, and when it is congenital, the bones below the injury are shortened, those of the forearm nearest the injury most; secondly, those of the hand, third those of the fingers; while the upper arm and shoulder are stronger because they get

ἐγκρατέστερα διὰ τὴν τροφήν· ἡ δὲ ἑτέρη χεὶρ διὰ τὰ ἔργα ἔτι πλείω ἐγκρατεστέρη. μινύθησις δὲ σαρκῶν, εἰ μὲν ἔξω ἐξέπεσεν, ἔσωθεν· εἰ δὲ μή,
8 ἐς τοὐναντίον ᾗ ἐξέπεσεν.

XXII. Ἀγκὼν δὲ ἢν ἔσω ἢ ἔξω ἐκβῇ, κατάτασις μὲν ἐν σχήματι ἐγγωνίῳ τῷ πήχει πρὸς βραχίονα· τὴν μὲν γὰρ μασχάλην ἀναλαβόντα ταινίῃ ἀνακρεμάσαι, ἀγκῶνι δὲ ἄκρῳ ὑποθέντα τι παρὰ τὸ ἄρθρον βάρος, ἐκκρεμάσαι, ἢ χερσὶ καταναγκάζειν· ὑπεραιωρηθέντος δὲ τοῦ ἄρθρου, αἱ παραγωγαὶ τοῖσι θέναρσι ὡς τὰ ἐν χερσίν· ἐπίδεσις ἐν τούτῳ τῷ σχήματι, καὶ ἀνάληψις
9 καὶ θέσις.

XXIII. Τὰ δὲ ὄπισθεν, ἐξαίφνης ἐκτείνοντα διορθοῦν τοῖσι θέναρσι· ἅμα δὲ δεῖ ἐν τῇ διορθώσει καὶ ἐν τοῖσι ἑτέροισιν. ἢν δὲ ἔμπροσθεν ἀμφὶ ὀθόνιον συνειλιγμένον, εὔογκον συγκάμπ-
5 τοντα ἅμα διορθοῦν.

XXIV. Ἢν ἑτεροκλινὲς ᾖ, ἐν τῇ διορθώσει ἀμφότερα ἅμα χρὴ ποιεῖν. τῆς δὲ μελέτης τῆς θεραπείης κοινόν, καὶ τὸ σχῆμα καὶ ἡ ἐπίδεσις. δύναται δὲ καὶ ἐκ τῆς διαστάσιος κοινῇ συμπίπ-
5 τειν ἅπαντα.

XXV. Τῶν δὲ ἐμβολέων, αἱ μὲν ἐξ ὑπεραιωρήσιος ἐμβάλλονται, αἱ δὲ ἐκ κατατάσιος, αἱ δὲ ἐκ περισφάλσιος· αὗται δὲ ἐκ τῶν ὑπερ-
4 βολέων τῶν σχημάτων ἢ τῇ ἢ τῇ σὺν τῷ τάχει.

XXVI. Χειρὸς δὲ ἄρθρον ὀλισθάνει ἢ ἔσω ἢ ἔξω, ἔσω δὲ τὰ πλεῖστα. σημεῖα δὲ εὔσημα·

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[1] XXII and XXIII are notes partly repeating XVIII and XIX.

more nourishment. The other arm is stronger still because of the work it does. Attenuation of the soft parts is on the inner side if the dislocation is outwards, otherwise on the side opposite to the dislocation.

XXII. When the elbow is dislocated inwards or outwards, extension should be made with the forearm at right angles to the upper arm. Take up and suspend the armpit by a band, and hang a weight from the point of the elbow near the joint, or press it down with the hands. The articular end of the humerus being lifted up, adjustments are made with the palms, as in dislocations of the hand. Bandaging, suspension, and fixation in this attitude.

XXIII. Backward dislocations, sudden extension and adjustment with the palms of the hands; the actions must be combined as in the other cases. If the dislocation is forwards make combined flexion and adjustment round a large rolled bandage.[1]

XXIV. If there is deviation to one side, in the adjustment both movements should be combined. Position and bandaging follow the common rule of treatment. It is also possible to put in all these cases by the common method of double extension.[2]

XXV. Some reductions are brought about by a lifting over, others by extension, others by circumduction; and these are by exaggerations of attitude in one direction or another combined with rapidity.

XXVI. The wrist is dislocated inwards or outwards, but chiefly inwards.[3] The signs are obvious,

[2] Partial lateral dislocations (cf. XVII), probably of radius.
[3] Partial dislocation of wrist, Celsus VIII. 17.

συγκάμπτειν τοὺς δακτύλους οὐ δύνανται· ἢν δὲ ἔξω, μὴ ἐκτείνειν. ἐμβολὴ δέ, ὑπὲρ τραπέζης τοὺς δακτύλους ἔχων, τοὺς μὲν τείνειν, τοὺς δὲ ἀντιτείνειν, τὸ δὲ ἐξέχον ἢ θέναρι ἢ πτέρνῃ ἅμα ἀπωθεῖν καὶ ὠθεῖν πρόσω κάτω, κάτωθεν δὲ κατὰ τὸ ἕτερον ὀστέον, ὄγκον μαλθακὸν ὑποθείς, ἢν μὲν ἄνω, καταστρέψας τὴν χεῖρα, ἢν δὲ κάτω, ὑπτίην. ἴησις δὲ ὀθονίοισιν.

XXVII. Ὅλη δὲ ἡ χεὶρ ὀλισθάνει ἢ ἔσω ἢ ἔξω, ἢ ἔνθα ἢ ἔνθα, μάλιστα δὲ ἔσω· ἔστι δὲ ὅτε καὶ ἡ ἐπίφυσις ἐκινήθη· ἔστι δ' ὅτε τὸ ἕτερον τῶν ὀστέων διέστη. τούτοισι κατάτασις ἰσχυρὴ ποιητέη· καὶ τὸ μὲν ἐξέχον ἀπωθεῖν, τὸ δὲ ἕτερον ἀντωθεῖν, δύο εἴδεα ἅμα καὶ ἐς τοὐπίσω καὶ ἐς τὸ πλάγιον, ἢ χερσὶν ἐπὶ τραπέζης ἢ πτέρνῃ. παλίγκοτα δὲ καὶ ἀσχήμονα· τῷ δὲ χρόνῳ κρατύνεται ἐς χρῆσιν. ἴησις, ὀθονίοισι σὺν τῇ χειρὶ καὶ τῷ πήχει· καὶ νάρθηκας μέχρι δακτύλων τιθέναι· ἐν νάρθηξι δὲ δεθέντα ταῦτα πυκινότερον[1] λύειν ἢ τὰ κατήγματα καὶ καταχύσει πλέονι χρῆσθαι.

XXVIII. Ἐκ γενεῆς δὲ βραχυτέρη ἡ χεὶρ γίνεται καὶ μινύθησις σαρκῶν μάλιστα τἀναντία ἢ ᾗ τὸ ἔκπτωμα· ηὐξημένῳ δέ, τὰ ὀστέα μένει.

XXIX. Δακτύλου δὲ ἄρθρον, ὀλισθὸν μέν,

[1] πυκνότερα.

[1] "In a great measure ideal," Adams. Seems connected with LXIV, but the epitomist may have seen lost chapters.

[2] Complete dislocation of wrist. *Mochl.* XVII; cf. *Fract.* XIII.

if inwards they cannot flex the fingers, if outwards they cannot extend them. Reduction: placing the fingers on a table, assistants should make extension and counter-extension, while the operator with palm or heel presses the projecting part back, with a downward and forward pressure, having put something thick and soft under the other bone. The hand should be prone if the dislocation is upwards and supine if it is downwards. Treatment with bandages.[1]

XXVII. The hand is completely dislocated, inwards, outwards, or to either side, but chiefly inwards, and the epiphysis is sometimes displaced [fracture of lower end of radius], sometimes one of the bones is separated. In these cases one must make strong extension. Press back the projecting part and make counter-pressure on the other side, the two kinds of movement backward and lateral being simultaneous, and performed on a table with the hands or heel. These are serious injuries and cause deformity, but in time the joints get strong enough for use. Treatment with bandages to include the hand and forearm, and apply splints reaching to the fingers. When put up in splints change more frequently than with fractures and use more copious douching.[2]

XXVIII. When the dislocation is congenital the hand becomes relatively shorter, and there is attenuation of the tissues most pronounced on the side opposite the displacement, but in an adult the bones are unaltered.[3]

XXIX. Dislocation of a finger-joint is easily

[1] *Mochl.* XVIII. These obscure accounts of elbow and wrist dislocations are discussed, p. 411.

εὔσημον. ἐμβυλὴ δέ, κατατείναντα ἐς ἰθύ, τὸ μὲν ἐξέχον ἀπωθεῖν, τὸ δὲ ἐναντίον ἀντωθεῖν· ἴησις δέ, ταινίοισιν ὀθονίοισιν. μὴ ἐμπεσὸν δέ, ἐπιπωροῦται ἔξωθεν. ἐκ γενεῆς δὲ ἢ ἐν αὐξήσει ἐξαρθρήσαντα, τὰ ὀστέα βραχύνεται τὰ κάτω τοῦ ὀλισθήματος, καὶ σάρκες μινύθουσι τἀναντία μάλιστα ἢ ὡς[1] τὸ ἔκπτωμα· ηὐξημένῳ δέ, τὰ ὀστέα μένει.

XXX. Γνάθος δὲ ὀλίγοισιν ἤδη τελέως ἐξήρθρησεν· ὀστέον[2] τε γὰρ τὸ ἀπὸ τῆς ἄνω γνάθου πεφυκὸς ὑπεζύγωται πρὸς τῷ ὑπὸ τὸ οὖς ὀστέῳ προσπεφυκότι, ὅπερ ἀποκλείει τὰς κεφαλὰς τῆς κάτω γνάθου, τῆς μὲν ἀνωτέρω ἐόν, τῆς δὲ κατωτέρω τῶν κεφαλέων· τά τε ἄκρεα τῆς κάτω γνάθου, τὸ μὲν διὰ τὸ μῆκος οὐκ εὐπαρείσδυτον,[3] τὸ δὲ αὖ τὸ κορωνόν τε καὶ ὑπερέχον ὑπὲρ τοῦ ζυγώματος· ἅμα τε ἀπ' ἀμφοτέρων τῶν ἄκρων τούτων νευρώδεις τένοντες πεφύκασιν, ἐξ ὧν ἐξήρτηνται οἱ μύες οἱ κροταφῖται καὶ μασητῆρες καλεόμενοι. διὰ τοῦτο δὲ καλέονται καὶ διὰ τοῦτο κινέονται, ὅτι ἐντεῦθεν ἐξήρτηνται· ἐν γὰρ τῇ ἐδωδῇ καὶ ἐν τῇ διαλέκτῳ καὶ ἐν τῇ ἄλλῃ χρήσει τοῦ στόματος, ἡ μὲν ἄνω γνάθος ἀτρεμεῖ· συνήρτηται γὰρ τῇ κεφαλῇ καὶ οὐ διήρθρωται· ἡ δὲ κάτω γνάθος κινεῖται· ἀπήρθρωται γὰρ ὑπὸ τῆς ἄνω γνάθου καὶ ἀπὸ τῆς κεφαλῆς. διότι μὲν οὖν ἐν σπασμοῖσί τε καὶ τετάνοισι πρῶτον τοῦτο τὸ ἄρθρον ἐπισημαίνει συντεταμένον, καὶ διότι πληγαὶ καίριοι καὶ καροῦσαι αἱ κροταφίτιδες γίνονται, ἐν ἄλλῳ λόγῳ εἰρήσεται. περὶ

[1] ἢ Kw. Mochl. [2] τὸ ὀστέον Erm., K.
[3] εὐπαρέκδυτον Foës in note, Erm., Kw. ; εὐπαρείσδυτον MSS.

recognised. Reduction: while extending in a direct line, press back the projecting part, and make counter-pressure on the opposite side. Treatment with tapes and as (narrow bandages). If not reduced, it gets fixed outside. When the dislocation is congenital or during growth, the bones below the laxation are shortened and the tissues waste, especially on the side opposite the displacement; but in an adult the bones are unaltered.

XXX. Complete dislocation of the lower jaw rarely occurs, for the bone which arises from the upper jaw forms a yoke[1] with that which is attached below the ear, and shuts off the heads of the lower jaw, being above the one and below the other. As to these extremities of the lower jaw, one of them is not easily dislocated[2] because of its length, while the other is the coronoid, and projects above the zygoma. And besides, ligamentous tendons arise from both these summits, into which are inserted the muscles called temporals and masseters. They derive their names and functions from being so attached; for in eating, speech, and other uses of the mouth the upper jaw is at rest, being connected with the head directly, not by a joint.[3] But the lower jaw moves, for it is articulated with the upper jaw and the head. Now, the reason why the joint first shows rigidity in spasms and tetanus, and why wounds of the temporal muscles are dangerous and apt to cause coma will be stated in another treatise.[4] The above are the

[1] The "zygoma."

[2] "Accessible," MSS. reading.

[3] Or, "by synarthrosis, not diarthrosis" (Galen). Some read *συνήρθρωται*.

[4] Pq. thinks this is *Wounds in the head*, but that seems to be the older treatise, and is written in a less finished style: also it hardly gives a full account of the matter.

δὲ τοῦ μὴ κάρτα ἐξαρθρεῖν, τάδε τὰ αἴτια· αἴτιον δὲ καὶ τόδε, ὅτι οὐ μάλα καταλαμβάνουσι τοιαῦται ἀνάγκαι βρωμάτων, ὥστε τὸν ἄνθρωπον χανεῖν μέζον ἢ ὅσον δύναται· ἐκπέσοι δ' ἂν ἀπ' οὐδενὸς ἄλλου σχήματος ἢ ἀπὸ τοῦ μέγα χανόντα παραγαγεῖν τὴν γένυν ἐπὶ θάτερα. προσσυμβάλλεται μέντοι καὶ τόδε πρὸς τὸ ἐκπίπτειν· ὁπόσα γὰρ νεῦρα καὶ ὁπόσοι μύες παρὰ ἄρθρα εἰσίν, ἢ ἀπὸ ἄρθρων ἀφ' ὧν συνδέδενται, τούτων ὅσα ἐν τῇ χρήσει πλειστάκις διακινεῖται, ταῦτα καὶ ἐς τὰς κατατάσιας δυνατώτατα ἐπιδιδόναι, ὥσπερ καὶ τὰ δέρματα τὰ εὐδεψητότατα πλείστην ἐπίδοσιν ἔχει. περὶ οὖ οὖν ὁ λόγος, ἐκπίπτει μὲν γνάθος ὀλιγάκις, σχᾶται μέντοι πολλάκις ἐν χάσμησιν, ὥσπερ καὶ ἄλλαι πολλαὶ μυῶν παραλλαγαὶ καὶ νεύρων τοῦτο ποιέουσιν. δῆλον μὲν οὖν ἐκ τῶνδε μάλιστά ἐστιν, ὁπόταν ἐκπεπτώκῃ· προΐσχεται[1] γὰρ ἡ κάτω γνάθος ἐς τοὔμπροσθεν καὶ παρῆκται τἀναντία τοῦ ὀλισθήματος καὶ τοῦ ὀστέου τὸ κορωνὸν ὀγκηρότερον φαίνεται παρὰ τὴν ἄνω γνάθον καὶ χαλεπῶς συμβάλλουσι τὰς [κάτω][2] γνάθους.

Τούτοισι δὲ ἐμβολὴ πρόδηλος, ἥτις γίνοιτ' ἂν ἁρμόζουσα· χρὴ γὰρ τὸν μέν τινα κατέχειν τὴν κεφαλὴν τοῦ τετρωμένου, τὸν δὲ περιλαβόντα τὴν κάτω γνάθον καὶ ἔσωθεν καὶ ἔξωθεν τοῖσι δακτύλοισι κατὰ τὸ γένειον, χάσκοντος τοῦ ἀνθρώπου ὅσον μετρίως δύναται, πρῶτον μὲν διακινεῖν τὴν [κάτω][3] γνάθον χρόνον τινά, τῇ καὶ τῇ παριάγοντα τῇ χειρί, καὶ αὐτὸν τὸν ἄνθρωπον κελεύειν χαλαρὴν τὴν γνάθον ἔχειν, καὶ συμπαράγειν καὶ συνδιδόναι ὡς μάλιστα· ἔπειτα ἐξ-

reasons why the dislocation is rare; and one may add this—that the necessities of eating are rarely such as to make a man open his mouth wider than is normally possible, and the dislocation would occur from no other position than that of lateral displacement of the chin while widely gaping. Still, the following circumstance also favours dislocation: among the tendons and muscles which surround joints or arise from them and hold them together, those whose functions involve most frequent movement are most capable of yielding to extension, just as the best tanned skins have the greatest elasticity. To come then to our subject, the jaw is rarely dislocated, but often makes a side-slip[1] in yawning, a thing which changes of position in muscles and tendons also often produce. When dislocation occurs, the following are the most obvious signs: the lower jaw is thrown forward and deviates to the side opposite the dislocation; the coronoid process appears more projecting on the upper jaw, and patients bring the jaws together with difficulty.

The appropriate mode of reduction in these cases is obvious. Someone should hold the patient's head, while the operator grasping the jaw with his fingers inside and out near the chin—the patient keeping it open as wide as he conveniently can—should move the jaw this way and that with his hand, and bid the patient keep it relaxed and assist the movement by yielding to it as far as possible.

[1] σχᾶται, a gymnastic term for a sudden lateral movement, Galen (XVIII (1), 438).

[1] προὶσχει Kw. [2] Omit Kw.
[3] Omit Galen, Ermerins, etc.

ἀπίνης σχᾶσαι, τρισὶ σχήμασι ὁμοῦ προσέχοντα τὸν νόον· χρὴ μὲν γὰρ παράγεσθαι ἐκ τῆς διαστροφῆς ἐς τὴν φύσιν, δεῖ δὲ ἐς τοὐπίσω ἀπωσθῆναι τὴν γνάθον τὴν κάτω, δεῖ δὲ ἑπόμενον τούτοισι συμβάλλειν τὰς γνάθους, καὶ μὴ χάσκειν. ἐμβολὴ μὲν οὖν αὕτη, καὶ οὐκ ἂν γένοιτο ἀπ' ἄλλων σχημάτων. ἰητρεία δὲ βραχείη ἀρκέσει·[1] σπλῆνα προστιθέντα κεκηρωμένον χαλαρῷ ἐπιδέσμῳ ἐπιδεῖν. ἀσφαλέστερον δὲ χειρίζειν ἐστὶν ὕπτιον κατακλίναντα τὸν ἄνθρωπον, ἐρείσαντα τὴν κεφαλὴν αὐτοῦ ἐπὶ σκυτίνου ὑποκεφαλαίου ὡς πληρεστάτου, ἵνα ὡς ἥκιστα ὑπείκῃ· προσκατέχειν δέ τινα χρὴ τὴν κεφαλὴν τοῦ τετρωμένου.

XXXI. Ἦν δὲ ἀμφότεραι αἱ γνάθοι ἐξαρθρήσωσιν, ἡ μὲν ἴησις ἡ αὐτή. συμβάλλειν δέ τι[2] ἧσσον οὗτοι τὸ στόμα δύνανται· καὶ γὰρ προπετέστεραι αἱ γένυες τούτοισι, ἀστραβέες δέ. τὸ δὲ ἀστραβὲς μάλιστ' ἂν γνοίης τοῖσιν ὁρίοισι τῶν ὀδόντων τῶν τε ἄνω καὶ τῶν κάτω κατ' ἴξιν. τούτοισι συμφέρει ὡς τάχιστα ἐμβάλλειν· ἐμβολῆς δὲ τρόπος πρόσθεν εἴρηται. ἢν δὲ μὴ ἐμπέσῃ, κίνδυνος περὶ τῆς ψυχῆς ὑπὸ πυρετῶν συνεχέων καὶ νωθρῆς καρώσιος—καρώδεες γὰρ οἱ μύες οὗτοι, καὶ ἀλλοιούμενοι καὶ ἐντεινόμενοι παρὰ φύσιν—φιλεῖ δὲ καὶ ἡ γαστὴρ ὑποχωρεῖν τούτοισι χολώδεα ἄκρητα ὀλίγα· καὶ ἢν ἐμέωσιν, ἄκρητα ἐμέουσιν· οὗτοι οὖν καὶ θνήσκουσι δεκαταῖοι μάλιστα.

XXXII. Ἦν δὲ κατεαγῇ ἡ κάτω γνάθος, ἢν μὲν μὴ ἀποκαυλισθῇ παντάπασιν, ἀλλὰ συνέχηται τὸ ὀστέον, ἐγκεκλιμένον δὲ ᾖ, κατορθῶσαι μὲν χρὴ τὸ ὀστέον, παρά γε τὴν γλῶσσαν

Then suddenly do a side-slip, having in mind three positions in the manœuvre. For the deviation must be reduced to the natural direction, the jaw must be pressed backwards, and, following this, the patient must close his jaws and not gape. This, then, is the reduction, and it will not succeed with other manœuvres. A short treatment will suffice. Apply a compress with cerate and a loose bandage over it. The safest way of operating is with the patient recumbent, his head being supported on a well-stuffed leather pillow, that it may yield as little as possible; and someone should also keep the patient's head fixed.

XXXI. If both lower jaws are dislocated [*i.e* both sides of the lower jaw], the treatment is the same. These patients are rather less able to close the mouth, for the chin is more projecting, though without deviation. You will best recognize the absence of deviation by the vertical correspondence of the upper and lower rows of teeth. It is well to reduce these cases as quickly as possible; and the mode of reduction is described above. If not reduced there is risk of death from acute fever and deep coma—for these muscles when displaced or abnormally stretched produce coma—and there are small evacuations of pure bile; if there is vomiting, it is also unmixed. These patients, then, die about the tenth day.

XXXII In fracture of the lower jaw, if it is not entirely broken across, but the bone preserves its continuity though distorted, one should adjust the bone by making suitable lateral pressure with the

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[1] ἀρκεῖ. [2] δ' ἐπι.

πλαγίην ὑπείραντα τοὺς δακτύλους, τὸ δὲ ἔξωθεν ἀντερείδοντα, ὡς ἂν συμφέρῃ· καὶ ἢν μὲν διεστραμμένοι ἔωσιν οἱ ὀδόντες οἱ κατὰ τὸ τρῶμα καὶ κεκινημένοι, ὁπόταν[1] τὸ ὀστέον κατορθωθῇ, ζεῦξαι τοὺς ὀδόντας χρὴ πρὸς ἀλλήλους, μὴ μοῦνον τοὺς δύο, ἀλλὰ καὶ πλέονας,[2] μάλιστα μὲν δὴ χρυσίῳ, ἔστ' ἂν κρατυνθῇ τὸ ὀστέον, εἰ δὲ μή, λίνῳ· ἔπειτα ἐπιδεῖν κηρωτῇ καὶ σπλήνεσιν ὀλίγοισι καὶ ὀθονίοισιν ὀλίγοισι, μὴ ἄγαν ἐρείδοντα, ἀλλὰ χαλιροῖσιν. εὖ γὰρ εἰδέναι χρή, ὅτι ἐπίδεσις ὀθονίων γνάθῳ κατεαγείσῃ[3] σμικρὰ μὲν ἂν ὠφελέοι, εἰ χρηστῶς ἐπιδέοιτο, μεγάλα δ' ἂν βλάπτοι, εἰ κακῶς ἐπιδέοιτο. πυκινὰ δὲ παρὰ τὴν γλῶσσαν ἐσματεῖσθαι χρή, καὶ πολὺν χρόνον ἀντέχειν τοῖσι δακτύλοισι κατορθοῦντα τοῦ ὀστέου τὸ ἐκκλιθέν·[4] ἄριστον δέ. εἰ αἰεὶ δύναιτο· ἀλλ' οὐχ οἷόν τε.

XXXIII. Ἢν δὲ ἀποκαυλισθῇ παντάπασιν τὸ ὀστέον—ὀλιγάκις δὲ τοῦτο γίνεται—κατορθοῦν μὲν χρὴ τὸ ὀστέον οὕτω, καθάπερ εἴρηται. ὅταν δὲ κατορθώσῃς, τοὺς ὀδόντας χρὴ ζευγνύναι, ὡς πρόσθεν εἴρηται· μέγα γὰρ ἂν συλλαμβάνοι ἐς τὴν ἀτρεμίην,[5] προσέτι καὶ εἴ τις ὀρθῶς ζεύξει ὥσπερ χρή, τὰς ἀρχὰς ῥάψας. ἀλλὰ γὰρ οὐ ῥηϊδιον ἐν γραφῇ χειρουργίην πᾶσαν διηγεῖσθαι, ἀλλὰ καὶ αὐτὸν ὑποτοπεῖσθαι[6] χρὴ ἐκ τῶν γεγραμμένων. ἔπειτα χρὴ δέρματος Καρχηδονίου· ἢν μὲν νηπιώτερος[7] ᾖ ὁ τρωθείς, ἀρκεῖ τῷ λοπῷ χρῆσθαι, ἢν δὲ τελειότερος ᾖ, αὐτῷ τῷ δέρματι· ταμόντα δὲ χρὴ εὖρος ὡς τριδάκτυλον, ἢ ὅπως ἂν ἁρμόζῃ, ὑπαλείψαντα

[1] ὅταν. [2] ἐπὶ πλείονας. [3] γνάθου κατεαγείσης.

fingers on the tongue side, and counter-pressure from without. If the teeth at the point of injury are displaced or loosened, when the bone is adjusted fasten them to one another, not merely the two, but several, preferably with the gold wire, but failing that, with thread, till consolidation takes place. Afterwards dress with cerate and a few compresses and bandages, also few, and with no great pressure, but lax. For one should bear in mind that bandaging a fractured jaw will do little good when well done, but will do great harm when it is done badly. One should make frequent palpation on the tongue side, and hold the distorted part of the bone adjusted with the fingers for a long time. It would be best if one could do so throughout; but that is impossible.

XXXIII. If the jaw is broken right across, which rarely happens, one should adjust it in the manner described. After adjustment you should fasten the teeth together as was described above, for this will contribute greatly to immobility, especially if one joins them up properly and fastens off the ends as they should be. For the rest, it is not easy to give exact and complete details of an operation in writing; but the reader should form an outline of it from the description. Next, one should take Carthaginian leather; if the patient is more of a child, the outer layer is sufficient, but if he is more adult, use the skin itself. Cut a three-finger breadth, or as much as may be suitable, and, anointing the jaw with

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[4] ἐγκλιθέν. [5] ἐς τὸ ἀτρεμεῖν.
[6] ὑποτυπεῖσθαι MSS.: ὑποτοπεῖσθαι Erot., Littré.
[7] νεώτερος.

κόμμι τὴν γνάθον—εὐμενέστερον γάρ κόλλης—[1] προσκολλῆσαι τὴν δέρριν ἄκρον πρὸς τὸ ἀποκεκαυλισμένον τῆς γνάθου, ἀπολείποντα ὡς δάκτυλον ἀπὸ τοῦ τρώματος ἢ ὀλίγῳ πλέον. τοῦτο μὲν ἐς τὸ κάτω μέρος· ἐχέτω δὲ ἐντομὴν κατὰ τὴν ἴξιν τοῦ γενείου ὁ ἱμάς, ὡς ἀμφιβεβήκῃ ἀμφὶ τὸ ὀξὺ τοῦ γενείου. ἕτερον δὲ ἱμάντα τοιοῦτον, ἢ ὀλίγῳ πλατύτερον, προσκολλῆσαι χρὴ πρὸς τὸ ἄνω μέρος τῆς γνάθου, ἀπολείποντα καὶ τοῦτον ἀπὸ τοῦ τρώματος, ὅσονπερ ὁ ἕτερος ἀπέλιπεν· ἐσχίσθω δὲ καὶ οὗτος ὁ ἱμὰς τὴν ἀμφὶ τὸ οὖς περίβασιν. ἀποξέες δὲ ἔστωσαν οἱ ἱμάντες ἀμφὶ τὴν συναφήν· [ἔνθα συνάπτεσθαί τε καὶ συνδεῖσθαι ἐς τὰ πέρατα τῶν ἱμάντων·][2] ἐν δὲ τῇ κολλήσει ἡ σὰρξ τοῦ σκύτεος πρὸς τοῦ χρωτὸς ἔστω, ἐχεκολλότερον γὰρ οὕτως. ἔπειτα κατατείναντα χρὴ καὶ τοῦτον τὸν ἱμάντα, μᾶλλον δέ τι τὸν περὶ τὸ γένειον, ὡς ὅτι μάλιστα μὴ ἀπομυλλαίνῃ[3] ἡ γνάθος, συνάψαι τοὺς ἱμάντας κατὰ τὴν κορυφήν· κἄπειτα περὶ τὸ μέτωπον ὀθονίῳ καταδῆσαι, καὶ κατάβλημα χρὴ εἶναι, ὥσπερ νομίζεται, ὡς ἀτρεμῇ τὰ δεσμά. τὴν δὲ κατάκλισιν ποιείσθω ἐπὶ τὴν ὑγιέα γνάθον, μὴ τῇ γνάθῳ ἐρηρεισμένος, ἀλλὰ τῇ κεφαλῇ. ἰσχναίνειν δὲ χρὴ τὸ σῶμα ἄχρις ἡμέρων δέκα, ἔπειτα ἀνατρέφειν μὴ βραδέως· ἢν δὲ ἐν τῇσι προτέρῃσι ἡμέρῃσι μὴ φλεγμήνῃ, ἐν εἴκοσιν ἡμέρῃσιν ἡ γνάθος κρατύνεται· ταχέως γὰρ ἐπιπωροῦται, ὥσπερ καὶ τὰ ἄλλα τὰ ἀραιὰ ὀστέα, ἢν μὴ ἐπισφακελίσῃ. ἀλλὰ γὰρ περὶ σφακελισμῶν τῶν συμπιπτόντων ὀστέων ἄλλος μακρὸς λόγος

[1] εὐμενέστερον γὰρ κόλλης B. ; κόλλῃ M.V.

gum—for it is more agreeable than glue—fasten the end of the leather to the broken-off part of the jaw at a finger's breadth or rather more from the fracture. This is for the lower part; and let the strap have a slit in the line of the chin, so as to include the chin point. Another strap, similar or a little broader, should be gummed to the upper part of the jaw at the same interval from the fracture as the former one; and let it also be split for going round the ear. Let the straps taper off at their junction, where the ends meet and are tied together. In the gumming, let the fleshy side of the leather be towards the skin; for so it adheres more firmly. One should then make traction on the thong, but rather more on the one that goes round the chin, to avoid so far as possible any distortion [1] of the jaw. Fasten the straps together at the top of the head, and afterwards pass a bandage round the forehead; and there should be the usual outer covering to keep the bands steady. The patient should lie on the side of the sound jaw, the pressure being not on the jaw, but on the head. Keep him on low diet for ten days, and afterwards feed him up without delay; for if there is no inflammation in the first period, the jaw consolidates in twenty days, since callus forms quickly as in other porous bones, unless necrosis supervenes. Now, necrosis of bones generally remains to be treated at length elsewhere.

[1] Erotian *s.v.*: probably "snout-like distortion." "In acutum" (Foës).

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[2] Omit Kw. and most MSS.

[3] *ἀποσμιλαίνει* Galen ("draw to a point"); *ἀπομυλλήνῃ* Erot. ("be distorted").

λείπεται.[1] αὕτη ἡ διάτασις ἡ ἀπὸ τῶν κολλημάτων εὐμενὴς καὶ εὐταμίευτος, καὶ ἐς πολλὰ καὶ πολλαχοῦ διορθώματα εὔχρηστος. τῶν δὲ ἰητρῶν οἱ μὴ σὺν νόῳ εὔχειρες καὶ ἐν ἄλλοισι τρώμασι τοιοῦτοί εἰσι καὶ ἐν γνάθων καθήξεσιν· ἐπιδέουσι γὰρ γνάθον κατεαγεῖσαν ποικίλως, καὶ καλῶς καὶ κακῶς· πᾶσα γὰρ ἐπίδεσις γνάθου οὕτως κατεαγείσης ἐκκλίνει[2] τὰ ὀστέα τὰ ἐς τὸ κάτηγμα ῥέποντα μᾶλλον ἢ ἐς τὴν φύσιν ἄγει.

XXXIV. Ἡν δὲ ἡ κάτω γνάθος κατὰ τὴν σύμφυσιν τὴν κατὰ τὸ γένειον διασπασθῇ—μούνη δὲ αὕτη ἡ σύμφυσις ἐν τῇ κάτω γνάθῳ ἐστίν, ἐν δὲ τῇ ἄνω πολλαί· ἀλλ' οὐ βούλομαι ἀποπλανᾶν τοῦ λόγου, ἐν ἄλλοισι γὰρ εἴδεσι νοσημάτων περὶ τούτων λεκτέον—ἦν οὖν διαστῇ ἡ κατὰ τὸ γένειον σύμφυσις, κατορθῶσαι μὲν παντὸς ἀνδρός ἐστιν. τὸ μὲν γὰρ ἐξεστεὸς ἐσωθεῖν χρὴ ἐς τὸ ἔσω μέρος, προσβαλόντα τοὺς δακτύλους, τὸ δ' ἔσω ῥέπον ἀνάγειν ἐς τὸ ἔξω μέρος, ἐνερείσαντα τοὺς δακτύλους. ἐς διάστασιν μέντοι διατεινάμενον ταῦτα χρὴ ποιεῖν· ῥᾷον γὰρ οὕτως ἐς τὴν φύσιν ἥξει ἢ εἴ τις ἐγχρίμπτοντα ἐς ἄλληλα τὰ ὀστέα παραναγκάζειν πειρᾶται· τοῦτο παρὰ πάντα τὰ τοιαῦτα [ὑπομνήματα][3] χαρίεν εἰδέναι. ὁπόταν δὲ κατορθώσῃς, ζεῦξαι μὲν χρὴ τοὺς ὀδόντας τοὺς ἔνθεν καὶ ἔνθεν πρὸς ἀλλήλους, ὥσπερ καὶ πρόσθεν εἴρηται. ἰῆσθαι

[1] Cf. LXIX.
[2] ἐγκλίνει B Kw.
[3] κατήγματα Littré. Erm. omits the whole sentence.

This mode of extension by straps gummed on is convenient, easy to manage, and very useful for a variety of adjustments. Practitioners who have manual skill without intelligence show themselves such in fractures of the jaw above all other injuries. They bandage a fractured jaw in a variety of ways, sometimes well, sometimes badly; but any bandaging of a jaw fractured in this way tends to turn the fragments inwards[1] at the lesion rather than bring them to their natural position.

XXXIV. When the lower jaw is torn apart at the symphysis which is at the chin[2]—this is the only symphysis in the lower jaw, while in the upper there are many, but I do not want to digress, for one must discuss these matters in relation to other maladies. When, therefore, the symphysis at the chin is separated, anyone can make the adjustment. For one should thrust the projecting part inwards, making pressure with the fingers, and force out that which inclines inwards, using the fingers for counter-pressure. This, however, must be done while the parts are separated by tension; for they will thus be reduced more easily than if one tries to force the bones into position while they override one another (this is a thing it is well to bear in mind in all such cases[3]). After adjustment, you shou'd join up the teeth on either side as described above. Treat with

[1] Kw.'s reading; Adams prudently has "derange."

[2] The idea that the lower jaw consists of two bones with a symphysis at the chin is corrected in Celsus VIII 1, but repeated by Galen (perhaps out of respect for Hippocrates), though he admits that it is hard to demonstrate.

[3] Perhaps an insertion, but read by Galen.

δὲ χρὴ κηρωτῇ καὶ σπλήνεσιν ὀλίγοισι καὶ
20 ὀθονίοισιν. ἐπίδεσιν δὲ βραχείην ἢ[1] ποικίλην
μάλιστα τοῦτο τὸ χωρίον ἐπιδέχεται, ἐγγὺς γάρ
τι τοῦ ἰσορρόπου ἐστίν, ὡς δὴ μὴ ἰσόρροπον ἐόν.
τοῦ δὲ ὀθονίου τὴν περιβολὴν ποιεῖσθαι χρή,
ἢν μὲν ἡ δεξιὴ γνάθος ἐξεστήκῃ, ἐπὶ δεξιά (ἐπὶ
δεξιὰ γὰρ νομίζεται εἶναι, ἢν ἡ δεξιὴ χεὶρ προ-
ηγῆται τῆς ἐπιδέσιος)· ἢν δὲ ἡ ἑτέρη γνάθος
ἐξεστήκῃ, ὡς ἑτέρως χρὴ τὴν ἐπίδεσιν ἄγειν. κἢν
μὲν ὀρθῶς τις κατορθώσηται καὶ ἐπατρεμήσῃ
ὡς χρή, ταχείη μὲν ἡ ἄλθεξις, οἱ δὲ ὀδόντες
30 ἀσινέες γίνονται· ἢν δὲ μή, χρονιωτέρη ἡ ἄλθεξις,
διαστροφὴν δὲ ἴσχουσιν οἱ ὀδόντες, καὶ σιναροὶ
32 καὶ ἀχρεῖοι γίνονται.

XXXV. Ἡν δὲ ἡ ῥὶς κατεαγῇ, τρόπος μὲν οὐχ εἷς ἐστὶ κατήξιος· ἀτὰρ πολλὰ μὲν δὴ καὶ ἄλλα λωβέονται οἱ χαίροντες τῇσι καλῇσιν ἐπιδέσεσιν ἄνευ νόου, ἐν δὲ τοῖσι περὶ τὴν ῥῖνα μάλιστα· ἐπιδεσίων γάρ ἐστιν αὕτη ποικιλωτάτη καὶ πλείστους μὲν σκεπάρνους ἔχουσα, διαῤῥωγὰς δὲ καὶ διαλείψιας ποικιλωτάτας τοῦ χρωτὸς ῥομβοειδέας. ὡς οὖν εἴρηται, οἱ τὴν ἀνόητον εὐχειρίην ἐπιτηδεύοντες ἄσμενοι ῥινὸς κατεηγυίης
10 ἐπιτυγχάνουσι, ὡς ἐπιδήσωσιν. μίην μὲν οὖν ἡμέραν ἢ δύο ἀγάλλεται μὲν ὁ ἰητρός, χαίρει δὲ ὁ ἐπιδεδεμένος· ἔπειτα ταχέως μὲν ὁ ἐπιδεδεμένος κορίσκεται, ἀσηρὸν γὰρ τὸ φόρημα· ἀρκεῖ δὲ τῷ ἰητρῷ, ἐπειδὴ ἐπέδειξεν ὅτι ἐπίσταται ποικίλως ῥῖνα ἐπιδεῖν. ποιεῖ δὲ ἡ ἐπίδεσις ἡ τοιαύτη

[1] "Rather than"; cf. *Surg.* XIV, Luke 17. 2. "Simple rather than complex"; but cf. Galen, who says that the

cerate and a few pads and bandages. A simple dressing rather than a complicated one is specially suited to this part, for it is nearly cylindrical[1] without actually being so. The bandage should be carried round to the right if the right jaw sticks out (it is said to be "to the right" if the right hand precedes in bandaging[2]): while if the other jaw projects, make the bandaging the other way. If the bandaging is well done and the patient keeps at rest, as he should, recovery is rapid, and the teeth are not damaged; if not, recovery is slow, and the teeth remain distorted and become damaged and useless.

XXXV. If the nose is broken, which happens in more than one way, those who delight in fine bandaging without judgment do more damage than usual. For this is the most varied of bandagings, having the most adze-like turns and diverse rhomboid intervals and vacancies.[3] Now, as I said, those who devote themselves to a foolish parade of manual skill are especially delighted to find a fractured nose to bandage. The result is that the practitioner rejoices, and the patient is pleased for one or two days; afterwards the patient soon has enough of it, for the burden is tiresome; and as for the practitioner, he is satisfied with showing that he knows how to apply complicated nasal bandages. But such bandaging

[1] *ἰσόῤῥοπος*="cylindrical" (Galen). "Semicircular" is perhaps clearer.

[2] *I.e.* to the surgeon's right, but from right to left of the patient's jaw (Galen).

[3] *διαλάμψιας* (Kw., Apollon.).

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lower jaw is the part on which students exercised their skill in complex forms of bandaging. (XVIII. (1) 462).

πάντα τἀναντία τοῦ δέοντος· τοῦτο μὲν γάρ, ὁπόσοι σιμοῦνται διὰ τὴν κάτηξιν, δηλονότι εἰ ἄνωθέν τις μᾶλλον πιέζοι, σιμώτεροι ἂν ἔτι εἶεν· τοῦτο δέ, ὅσοισι παραστρέφεται ἢ ἔνθα ἢ ἔνθα ἡ ῥίς, ἢ κατὰ τὸν χόνδρον ἢ ἀνωτέρω, δηλονότι οὐδὲν αὐτοὺς ἡ ἄνωθεν ἐπίδεσις ὠφελήσειεν,[1] ἀλλὰ καὶ βλάψειε[2] μᾶλλον· οὐχ οὕτω γὰρ εὖ συναρμόσει σπλήνεσι τὸ ἐπὶ θάτερον τῆς ῥινός· καίτοι οὐδὲ τοῦτο ποιέουσιν οἱ ἐπιδέοντες.

XXXVI. Ἄγχιστα δὲ ἡ ἐπίδεσίς μοι δοκεῖ ἄν τι ποιεῖν, εἰ κατὰ μέσην τὴν ῥῖνα κατὰ τὸ ὀξὺ ἀμφιφλασθείη ἡ σὰρξ κατὰ τὸ ὀστέον, ἢ εἰ κατὰ τὸ ὀστέον σμικρόν τι σίνος εἴη,[3] καὶ μὴ μέγα· τοῖσι γὰρ τοιούτοισιν ἐπιπώρωμα ἴσχει ἡ ῥίς, καὶ ὀκριοειδεστέρη τινὶ γίνεται· ἀλλ' ὅμως οὐδὲ τούτοισι δή που πολλοῦ ὄχλου δεῖται ἡ ἐπίδεσις, εἰ δή τι καὶ δεῖ ἐπιδεῖν. ἀρκεῖ δὲ ἐπὶ μὲν τὸ φλάσμα σπληνίον ἐπιτείναντα κεκηρωμένον, ἔπειτα ὡς ἀπὸ δύο ἀρχέων ἐπιδεῖται, οὕτως ὀθονίῳ ἐς ἅπαξ περιβάλλειν. ἀρίστη μέντοι ἰητρείη τῷ ἀλήτῳ, τῷ σηπανίῳ, τῷ πλυτῷ, γλίσχρῳ, πεφυρμένῳ, ὀλίγῳ, καταπλάσσειν τὰ τοιαῦτα· χρὴ δέ, ἢν μὲν ἐξ ἀγαθῶν ᾖ τῶν πυρῶν τὸ ἄλητον καὶ εὐόλκιμον, τούτῳ χρῆσθαι ἐς πάντα τὰ τοιαῦτα· ἢν δὲ μὴ πάνυ ὅλκιμον ᾖ, ἐς ὀλίγην μάννην ὕδατι ὡς λειοτάτην διέντα. τούτῳ φυρᾶν τὸ ἄλητον, ἢ κόμμι πάνυ ὀλίγον ὡσαύτως μίσγειν.

XXXVII. Ὁπόσοισι μὲν οὖν ῥὶς ἐς τὸ κάτω

[1] ὠφελήσει. [2] βλάψει.
[3] ἔχοι.

acts in every way contrary to what is proper; for first, in cases where the nose is rendered concave by the fracture, if more pressure is applied from above, it will obviously be more concave, and again in cases where the nose is distorted to either side, whether in the cartilaginous part or higher up, bandaging will obviously be useless in either case, and will rather do harm; for so one will not arrange the pads well on the other side of the nose, and in fact those who put on bandages omit this.

XXXVI. Bandaging seems to me to be most directly[1] useful where the soft parts are contused against the bone in the middle of the nose at the ridge, or when, without great damage, there is some small injury at the bone; for in such cases the nose gets a superficial callus and a certain jagged outline. But not even in these cases is there need of very troublesome bandaging, even if it is required at all. It suffices to stretch a small compress soaked in cerate over the contusion and then take one turn of bandage round it, as from a two-headed roller. After all, the best treatment is to use a little fresh flour, worked and kneaded into a glutinous mass, as a plaster for such lesions. If one has wheat flour[2] of good quality forming a ductile paste, one should use it in all such cases; but if it is not very ductile, soak a little frankincense powdered as finely as possible in water, and knead the flour with this, or mix a very little gum in the same way.[3]

XXXVII. In cases where the nose is fractured with

[1] ἄγχιστα = μάλιστα (Erotian).

[2] σηπάνιος may be either summer wheat or a special kind rich in gluten (Galen).

[3] μάννα = powder of frankincense (Dioscorides 1.68).

καὶ ἐς τὸ σιμὸν ῥέπουσα καταγῇ, ἢν μὲν ἐκ τοῦ ἔμπροσθεν μέρεος κατὰ τὸν χόνδρον ἴζηται, οἷόν τέ ἐστι καὶ ἐντιθέναι τι διόρθωμα ἐς τοὺς μυκτῆρας· ἢν δὲ μή, ἀνορθοῦν μὲν χρὴ πάντα τὰ τοιαῦτα, τοὺς δακτύλους ἐς τοὺς μυκτῆρας ἐντιθέντα, ἢν ἐνδέχηται, ἢν δὲ μή, πάγχυ ὑπάλειπτρον, μὴ ἐς τὸ ἔμπροσθεν τῆς ῥινὸς ἀνάγοντα τοῖσι δακτύλοισι, ἀλλ' ᾗ ἵδρυται· ἔξωθεν δὲ τῆς ῥινὸς ἔνθεν καὶ ἔνθεν ἀμφιλαμβάνοντα τοῖσι δακτύλοισι, συναναγκάζειν τε ἅμα καὶ ἀναφέρειν ἐς τὸ ἄνω. καὶ ἢν μὲν πάνυ ἐν τῷ ἔμπροσθεν τὸ κάτηγμα ᾖ,[1] οἷόν τέ τι καὶ ἔσω τῶν μυκτήρων ἐντιθέναι, ὥσπερ ἤδη εἴρηται, ἢ ἄχνην τὴν ἀφ' ἡμιτυβίου ἢ ἄλλο τι τοιοῦτον, ἐν ὀθονίῳ εἰλίσσοντα, μᾶλλον δὲ ἐν Καρχηδονίῳ δέρματι ἐῤῥάψαντα· σχηματίσαντα τὸ ἅρμοσσον σχῆμα τῷ χωρίῳ, ἵνα ἐγκείσεται. ἢν μέντοι προσωτέρω ᾖ τὸ κάτηγμα, οὐδὲν οἷόν τε ἔσω ἐντιθέναι· καὶ γὰρ εἰ ἐν τῷ ἔμπροσθεν ἀσηρὸν τὸ φόρημα, πῶς γε δὴ οὐκ ἐν τῷ ἐσωτέρω; τὸ μὲν οὖν πρῶτον καὶ ἔξωθεν ἀναπλάσασθαι καὶ ἔσωθεν ἀφειδήσαντα χρὴ ἀναγαγεῖν ἐς τὴν ἀρχαίην φύσιν καὶ διορθώσασθαι. κάρτα γὰρ οἵη τε ῥὶς καταγεῖσα ἀναπλάσσεσθαι, μάλιστα μὲν αὐθημερόν,[2] ἢν δὲ μή, ὀλίγῳ ὕστερον· ἀλλὰ καταβλακεύουσιν οἱ ἰητροί, καὶ ἀπαλωτέρως τὸ πρῶτον ἅπτονται ἢ ὡς χρή· παραβάλλοντα γὰρ τοὺς δακτύλους χρὴ ἔνθεν καὶ ἔνθεν κατὰ τὴν φύσιν τῆς ῥινὸς ὡς κατωτάτω, κάτωθεν συναναγκάζειν, καὶ οὕτω μάλιστα ἀνορθοῦσθαι[3] σὺν τῇ ἔσωθεν διορθώσει

[1] εἰ . . . εἴη. [2] αὐθήμερος. [3] ἀνορθοῦντα Kw.

depression and tends to become snub, if the depression is in the front part of the cartilage, it is possible to insert some rectifying support into the nostrils. Failing this, one should elevate all such cases, if possible by inserting the finger into the nostrils, but if not, a thick spatula should be inserted, directing it with the fingers, not to the front of the nose, but to the depressed part: then getting a grip on each side of the nose outside with the fingers, combine the two movements of compression and lifting. If the fracture is quite in front, it is possible, as was said, to insert something into the nostrils, either lint from linen or something of the kind, rolling it up in a rag, or better, sewing it up in Carthaginian leather, adapting its shape to fit the part where it will lie. But if the fracture be further in, nothing can be inserted; for if it is irksome to endure anything in front, how should it not be more so further in? The first thing, then, is to reshape it from outside, and internally to spare no pains in adjusting it and bringing it to its natural position; for it is quite possible for a broken nose to be reshaped, especially on the day of the accident, or, failing that, a little later. But practitioners act feebly, and treat it at first more gently than they should. For one ought to insert[1] the fingers on each side as far as the conformation of the nose allows, and then force it up from below, thus best combining elevation with the rectification from within. Further, no practi-

[1] Editors discuss the obscurity of this passage at great length. The main point is whether the fingers are inserted or applied to the outside of the nose. I follow Ermerins and Petrequin as against Littré-Adams: though there is much to be said on both sides.

[διορθοῦντα].[1] ἔπειτα δὲ ἐς ταῦτα ἰητρὸς οὐδεὶς ἄλλος ἐστὶ τοιοῦτος, εἰ ἐθέλοι καὶ μελετᾶν καὶ τολμᾶν, ὡς οἱ δάκτυλοι αὐτοῦ οἱ λιχανοί· οὗτοι γὰρ κατὰ φύσιν μάλιστά εἰσιν. παραβάλλοντα γὰρ χρὴ τῶν δακτύλων ἑκάτερον, παρὰ πᾶσαν τὴν ῥῖνα ἐρείδοντα, ἡσύχως οὕτως ἔχειν, μάλιστα μέν, εἰ οἷόν τε εἴη, αἰεί, ἔστ' ἂν κρατυνθῇ· εἰ δὲ μή, ὡς πλεῖστον χρόνον, αὐτόν, ὡς εἴρηται· εἰ δὲ μή, ἢ παῖδα ἢ γυναῖκά τινα· μαλθακὰς γὰρ τὰς χεῖρας δεῖ εἶναι· οὕτω γὰρ ἂν κάλλιστα ἰητρευθείη ὀτέῳ ἡ ῥὶς μὴ ἐς τὸ σκολιόν, ἀλλ' ἐς τὸ κάτω ἱδρυμένη, ἰσόῤῥοπος εἴη. ἐγὼ μὲν οὖν οὐδεμίην που ῥῖνα εἶδον ἥτις οὕτω καταγεῖσα οὐχ οἵη τε διορθωθῆναι αὐτίκα πρὶν πωρωθῆναι συναναγκαζομένη ἐγένετο, εἴ τις ὀρθῶς ἐθέλοι ἰητρεύειν· ἀλλὰ γὰρ οἱ ἄνθρωποι αἰσχροὶ μὲν εἶναι πολλοῦ ἀποτιμῶσι, μελετᾶν δὲ ἅμα μὲν οὐκ ἐπίστανται, ἅμα δὲ οὐ τολμῶσιν, ἢν μὴ ὀδυνῶνται, ἢ θάνατον δεδοίκωσιν· καίτοι ὀλιγοχρόνιος ἡ πώρωσις τῆς ῥινός· ἐν γὰρ δέκα ἡμέρῃσι κρατύνεται, ἢν μὴ ἐπισφακελίσῃ.

XXXVIII. Ὁπόσοισι δὲ τὸ ὀστέον ἐς τὸ πλάγιον κατάγνυται, ἡ μὲν ἴησις ἡ αὐτή· τὴν δὲ διόρθωσιν διλονότι χρὴ ποιεῖσθαι οὐκ ἰσόῤῥοπον ἀμφοτέρωθεν, ἀλλὰ τό τε ἐκκεκλιμένον[2] ὠθεῖν ἐς τὴν φύσιν, ἔκτοσθεν ἀναγκάζοντα καὶ ἐσματευόμενον ἐς τοὺς μυκτῆρας, καὶ τὰ ἔσω ῥέψαντα διορθοῦν ἀόκνως, ἔστ' ἂν κατορθώσῃς, εὖ εἰδότα ὅτι, ἢν μὴ αὐτίκα κατορθώσηται, οὐχ οἷόν τε μὴ οὐχὶ διεστράφθαι τὴν ῥῖνα. ὅταν δὲ ἀγάγῃς ἐς

[1] Galen. Omit most MSS., Littré, etc.

tioner is so suitable for the job as are the index fingers of the patient himself, if he is willing to be careful and courageous, for these fingers are especially conformable to the nose. He should insert the fingers alternately,[1] making pressure along the whole course of the nose, and keeping it steady; especially let him continue it, if he can, till consolidation occurs, failing that, as long as possible. As was said, he should do it himself; but if not, a boy or woman must do it, for the hands should be soft. This is the best treatment when the nose is not distorted laterally, but keeps evenly balanced though depressed. Now, I never saw a nose fractured in this way which could not be adjusted by immediate forcible manipulation before consolidation set in, if one chose to treat it properly. But while men will give much to avoid being ugly, they do not know how to combine care with endurance, unless they suffer pain or fear death. Yet the formation of callus in the nose takes little time, for it is consolidated in ten days, unless necrosis supervenes.

XXXVIII. In cases where the bone is fractured with deviation, the treatment is the same. Adjustment should obviously not be made evenly on both sides, but press the bent-out part into its natural position by force from without, and, introducing the finger into the nostrils, boldly rectify the internal deviation till you get it straight, bearing in mind that, if it is not straightened at once, the nose will infallibly be distorted. And when you bring it to

[1] This seems the surgical implication of ἑκάτερον. Cf. *Surg.* X.

[2] ἐγκεκλιμένου.

τὴν φύσιν, προσβάλλοντα χρὴ ἐς τὸ χωρίον ἢ τοὺς δακτύλους ἢ τὸν ἕνα δάκτυλον, ᾗ ἐξέσχεν ἀνακωχεῖν ἢ αὐτὸν ἢ ἄλλον τινά, ἔστ' ἂν κρατυνθῇ τὸ τρῶμα. ἀτὰρ καὶ ἐς τὸν μυκτῆρα τὸν σμικρὸν δάκτυλον ἀπωθέοντα ἄλλοτε καὶ ἄλλοτε διορθοῦν χρὴ τὰ ἐγκλιθέντα. ὅ τι δ' ἂν φλεγμονῆς ὑπογίνηται τούτοισι, δεῖ τῷ σταιτὶ χρῆσθαι· τοῖσι μέντοι δακτύλοισι προσέχειν ὁμοίως καὶ τοῦ σταιτὸς ἐπικειμένου.

Ἢν δέ που κατὰ τὸν χόνδρον ἐς τὰ πλάγια καταγῇ, ἀνάγκη τὴν ῥῖνα ἄκρην παρεστράφθαι. χρὴ οὖν τοῖσι τοιούτοισιν ἐς τὸν μυκτῆρα ἄκρον διόρθωμά τι τῶν εἰρημένων ἢ ὅ τι τούτοισιν ἔοικεν ἐντιθέναι. πολλὰ δ' ἄν τις εὕροι τὰ ἐπιτήδεια, ὅσα μήτε ὀδμὴν ἴσχει, ἄλλως τε καὶ προσηνέα ἐστίν· ἐγὼ δέ ποτε πλεύμονος προβάτου ἀπότμημα ἐνέθηκα, τοῦτο γάρ πως παρέτυχεν· οἱ γὰρ σπόγγοι ἐντιθέμενοι ὑγράσματα δέχονται. ἔπειτα χρὴ Καρχηδονίου δέρματος λοπόν, πλάτος ὡς τοῦ μεγάλου δακτύλου τετμημένον, ἢ ὅπως ἂν συμφέρῃ, προσκολλῆσαι ἐς τὸ ἔκτοσθεν πρὸς τὸν μυκτῆρα τὸν ἐκκεκλιμένον.[1] κἄπειτα κατατεῖναι τὸν ἰμάντα ὅπως ἂν συμφέρῃ· μᾶλλον δὲ ὀλίγῳ τείνειν χρή, ὥστε[2] ὀρθὴν καὶ ἀπαρτῆ[3] τὴν ῥῖνα εἶναι. ἔπειτα—μακρὸς γὰρ ἔστω ὁ ἰμάς—κάτωθεν[4] τοῦ ὠτὸς ἀγαγόντα αὐτὸν ἀναγαγεῖν περὶ τὴν κεφαλήν· καὶ ἔξεστι μὲν κατὰ τὸ μέτωπον προσκολλῆσαι τὴν τελευτὴν τοῦ ἰμάντος, ἔξεστι δὲ καὶ μακρότερον [ἄγειν, ἔπειτα] περιελίσσοντα[5] περὶ τὴν κεφαλὴν καταδεῖν. τοῦτο ἅμα μὲν δικαίην τὴν

[1] ἐγκεκλιμένον. [2] ἢ ὥστε.

the normal, one or more fingers should be applied at the place where it stuck out, and either the patient or someone else should support it till the lesion is consolidated. One should also insert the little finger from time to time into the nostril and adjust the depressed part. If inflammation arises in these cases, one should use the dough, but keep up the finger application as before, even when the dough is on.

If fracture with deviation occurs in the cartilage, the end of the nose will infallibly be distorted. In such cases, insert one of the internal props mentioned above, or something of the kind, into the nasal opening. One could find many suitable substances without odour and otherwise comfortable. I once inserted a slice from a sheep's lung which happened to be handy; for when sponges are put in, they absorb moisture. Then one should take the outer layer of Carthaginian leather, cut a strip of a thumb's breadth, or what is suitable, and gum it to the outer part of the nostril on the bent side. Next, make suitable tension on the strap—one should pull rather more than suffices to make the nose straight and outstanding.[1] Then—the strap should be a long one—bring it under the ear and up round the head. One may gum the end of the strap on to the forehead. One may also carry it further, and after making a turn round the head, fasten it off. This gives an adjustment which is at

[1] ἀπαρτητὴν Kw. ἀπαρτῆ Galen, Littré, vulg.

[3] ἀπαρτητὴν. [4] ἐς τὰ κάταθεν.
[5] ἐπιπεριελίσσοντα, Littré, Kw., who omit ἄγειν, ἔπειτα.

διόρθωσιν ἔχει, ἅμα δὲ εὐταμίευτον, καὶ μᾶλλον, ἢν ἐθέλῃ, καὶ ἧσσον τὴν ἀντιῤῥοπίην ποιήσεται[1] τῆς ῥινός. ἀτὰρ καὶ ὁπόσοισιν ἐς τὸ πλάγιον ἡ ῥὶς κατάγυυται, τὰ μὲν ἄλλα ἰητρεύειν χρὴ ὡς προείρηται· προσδεῖται δὲ τοῖσι πλείστοισι καὶ τοῦ ἱμάντος πρὸς ἄκρην τὴν ῥῖνα προσκολληθῆναι
47 τῆς ἀντιῤῥοπίης εἵνεκα.

XXXIX. Ὁπόσοισι δὲ σὺν τῇ κατήξει καὶ ἕλκεα προσγίνεται, οὐδὲν δεῖ ταράσσεσθαι διὰ τοῦτο· ἀλλ' ἐπὶ μὲν τὰ ἕλκεα ἐπιτιθέναι ἢ πισσήρην ἢ τῶν ἐναίμων τι· εὐαλθέα γὰρ τῶν τοιούτων τὰ πλεῖστά ἐστιν ὁμοίως, κἢν ὀστέα μέλλῃ ἀπιέναι. τὴν δὲ διόρθωσιν τὴν πρώτην ἀόκνως χρὴ ποιεῖσθαι, μηδὲν ἐπιλείποντα, καὶ τὰς διορθώσιας τοῖσι δακτύλοισι ἐν τῷ ἔπειτα χρόνῳ[2] χαλαρωτέροισι μὲν χρεόμενον, χρεόμενον
10 δὲ· εὐπλαστότατον γάρ τι παντὸς τοῦ σώματος ἡ ῥὶς ἐστιν. τῶν δὲ ἱμάντων τῇ κολλήσει καὶ τῇ ἀντιῤῥοπίῃ παντάπασιν οὐδὲν κωλύει χρῆσθαι, οὔτ' ἢν ἕλκος ᾖ, οὔτ' ἢν ἐπιφλεγμήνῃ·
14 ἀλυπόταται γάρ εἰσιν.

XL. Ἢν δὲ οὖς καταγῇ, ἐπιδέσιες μὲν πᾶσαι πολέμιαι· οὐ γὰρ οὕτω τις χαλαρὸν περιβάλλοι·[3] ἢν δὲ μᾶλλον πιέζῃ, πλέον κακὸν ἐργάσεται· ἐπεὶ καὶ ὑγιὲς οὖς, ἐπιδέσει πιεχθέν, ὀδυνηρὸν καὶ σφυγματῶδες καὶ πυρετῶδες γίνεται. ἀτὰρ καὶ τὰ ἐπιπλάσματα, κάκιστα μὲν τὰ βαρύτατα τὸ ἐπίπαν· ἀτὰρ καὶ πλεῖστα φλαῦρα καὶ ἀποστατικά, καὶ μύξαν τε ὑποποιεῖ [πλείω],[4]

[1] ποιῆσαι.
[2] τοῖσιν . . . χρόνοισι.
[3] περιβάλλει.
[4] Omit.

once normal and easily arranged; and one can make the counter-deviation of the nose more or less as one chooses. Again, when the [bone of the] nose is fractured with deviation, besides the other treatment mentioned, it is also necessary in most cases that some of the leather should be gummed on to the tip of the nose to make counter-deviation.[1]

XXXIX. In cases where the fracture is complicated with wounds, there should be no alarm on that account, but one should apply an ointment containing pitch or some other remedy for fresh wounds; for the majority of such cases heal no less readily, even if bones are going to come away. The first adjustment should be made without delay and with completeness: the later rectifications with the fingers are to be done more moderately, yet they are to be done, for of all parts of the body the nose is most easily modelled. There is absolutely no objection to the gumming on of straps and counter-deviation, not even if there is a wound or inflammation supervening, for the manipulations are quite painless.

XL. If the ear is fractured, all bandaging is harmful, for one cannot apply a circular bandage so as to be lax; and if one uses more pressure one will do further damage, for even a sound ear under pressure of a bandage becomes painful, throbbing, and heated. Besides, as to plasters, the heaviest on the whole are the worst; they have also for the most part harmful qualities producing abscess, excessive formation of mucus, and afterwards troublesome dis-

[1] Galen found this gummed leather method very unsatisfactory; "if you pull hard enough to do any good, it comes off" (XVIII (1) 481).

κἄπειτα ἐκπυήσιας ἀσηράς· τούτων δὲ ἥκιστα οὗς καταγὲν προσδεῖται· ἄγχιστα μήν, εἴπερ χρή, τὸ γλίσχρον ἄληκτον, χρὴ δὲ μηδὲ τοῦτο βάρος ἔχειν. ψαύειν δὲ ὡς ἥκιστα συμφέρει· ἀγαθὸν γὰρ φάρμακόν ἐστιν ἐνίοτε καὶ τὸ μηδὲν προσφέρειν, καὶ πρὸς τὸ οὖς καὶ πρὸς ἄλλα πολλά. χρὴ δὲ καὶ τὴν ἐπικοίμησιν φυλάσσεσθαι· τὸ δὲ σῶμα ἰσχναίνειν, καὶ μᾶλλον ᾧ ἂν κίνδυνος ᾖ ἔμπυον τὸ οὖς γενέσθαι· ἄμεινον δὲ καὶ μαλθάξαι τὴν κοιλίην· ἢν δὲ καὶ εὐήμετος[1] ᾖ, ἐμεῖν ἐκ συρμαισμοῦ. ἢν δὲ ἐς ἐμπύησιν ἔλθῃ, ταχέως μὲν οὐ χρὴ στομοῦν· πολλὰ γὰρ καὶ τῶν δοκεόντων ἐκπυεῖσθαι ἀναπίνεταί ποτε, κἢν μηδέν τις καταπλάσσῃ. ἢν δὲ ἀναγκασθῇ στομῶσαι, τάχιστα μὲν ὑγιὲς γίνεται, ἢν τις πέρην διακαύσῃ· εἰδέναι μέντοι χρὴ σαφῶς ὅτι κυλλὸν ἔσται τὸ οὖς, καὶ μεῖον τοῦ ἑτέρου, ἢν πέρην διακαυθῇ. ἢν δὲ μὴ πέρην καίηται, τάμνειν χρὴ τὸ μετέωρον, μὴ πάνυ σμικρὴν τομήν· διὰ παχυτέρου καὶ τὸ πύον εὑρίσκεται ἢ ὡς ἄν τις δοκέοι· ὡς δ' ἐν κεφαλαίῳ εἰπεῖν,[2] καὶ πάντα τἄλλα τὰ μυξώδεα καὶ μυξοποιά, ἅτε γλίσχρα ἐόντα, ὑποθιγγανόμενα διολισθάνει ταχέως ὑπὸ τοὺς δακτύλους καὶ ἔνθα καὶ ἔνθα· διὰ τοῦτο διὰ παχυτέρου εὑρίσκουσι τὰ τοιαῦτα οἱ ἰητροὶ ἢ ὡς οἴονται· ἐπεὶ καὶ τῶν γαγγλιωδέων ἔνια, ὅσα ἂν πλαδαρὰ ᾖ, καὶ μυξώδεα σάρκα ἔχῃ, πολλοὶ στομοῦσιν, οἰόμενοι ῥεῦμα ἀνευρήσειν ἐς τὰ τοιαῦτα· ἡ μὲν οὖν γνώμη τοῦ ἰητροῦ ἐξαπατᾶται· τῷ δὲ πρήγματι τῷ τοιούτῳ οὐδεμία βλάβη στομωθέντι. ὅσα δὲ ὑδατώδεα χωρία

[1] εὐεμέτης Kw. [2] εἰρῆσθαι.

charges of pus. A fractured ear is far from needing these as well. If need be, the best application is the glutinous flour plaster; but even this should not be heavy. It is well to touch the part as little as possible, for it is a good remedy sometimes to use nothing, both in the case of the ear and many others. Care must be taken as to the way of lying. Keep the patient on low diet, the more so if there is danger of an abscess in the ear. It is also good to loosen the bowels, and, if he vomits easily, cause emesis by "syrmaism."[1] If it comes to suppuration, do not be in a hurry to open the abscess, for in many cases when there seems to be suppuration, it is absorbed, and that without any application. If one is forced to open an abscess, it will heal most quickly by cauterising right through; but bear well in mind that the ear, if cauterised right through, will be deformed and smaller than the other. If it is not cauterised through, one should make an incision in the swollen part, not very small, for the pus will be found under a thicker covering than one would expect. And, speaking generally, all other parts of a mucous nature, or which secrete mucus, being viscous slip about readily hither and thither when palpated, wherefore practitioners find them thicker to penetrate than they expected. Thus, in the case of some ganglionic tumours which are flabby and have mucoid flesh, many open them, thinking to find a flux of humours to such parts. The practitioner is deceived in his opinion; but in practice no harm is done by such a tumour being opened. Now, as to watery parts,

[1] An emetic of radishes and salt water (Erotian): cf. Herod II. 88.

40 ἐστὶν ἢ μύξης πεπληρωμένα, καὶ ἐν οἷοισι χωρίοισιν ἕκαστα θάνατον φέρει στομούμενα ἢ καὶ ἀλλοίας βλάβας, περὶ τούτων ἐν ἄλλῳ λόγῳ γεγράψεται. ὅταν οὖν τάμῃ τις τὸ οὖς, πάντων μὲν καταπλασμάτων, πάσης δὲ μοτώσιος ἀπέχεσθαι χρή· ἰητρεύειν δὲ ἢ ἐναίμῳ ἢ ἄλλῳ τῳ ὅ τι μήτε βάρος μήτε πόνον παρασχήσει· ἢν γὰρ ὁ χόνδρος ἄρξηται ψιλοῦσθαι, καὶ ὑποστάσιας ἴσχῃ [πυρώδεας ἢ χολώδεας],[1] ὀχλῶδες[2] [καὶ] μοχθηρόν· γίνεται δὲ τοῦτο δι' ἐκείνας τὰς ἰήσιας.
50 πάντων δὲ τῶν παλιγκοτησάντων ἡ πέρην διά-
51 καυσις αὐταρκέστατον.

XLI. Σπόνδυλοι δὲ οἱ κατὰ ῥάχιν, ὅσοισι μὲν ὑπὸ νοσημάτων ἕλκονται ἐς τὸ κυφόν, τὰ μὲν πλεῖστα ἀδύνατα λύεσθαι, ποτὶ καὶ ὅσα ἀνωτέρω τῶν φρενῶν τῆς προσφύσιος κυφοῦται. τῶν δὲ κατωτέρω μετεξέτερα λύουσι κιρσοὶ γενόμενοι ἐν τοῖς σκέλεσι, μᾶλλον δ' ἔτι ἐγγινόμενοι κιρσοὶ ἐν τῇ κατὰ ἰγνύην φλεβί· οἷσι δ' ἂν τὰ κυφώματα λύηται, ἐγγίνονται δὲ ἐν τῇ κατὰ βουβῶνα· ἤδη δέ τισιν ἔλυσε καὶ δυσεντερίη πολυχρόνιος γενο-
10 μένη. καὶ οἷσι μὲν κυφοῦται ῥάχις παισὶν ἐοῦσι, πρὶν ἢ τὸ σῶμα τελειωθῆναι ἐς αὔξησιν· τούτοισι μὲν οὐδὲ συναύξεσθαι ἐθέλει κατὰ τὴν ῥάχιν τὸ σῶμα, ἀλλὰ σκέλεα μὲν καὶ χεῖρες τελειοῦνται· ταῦτα δὲ ἐνδεέστερα γίνεται. καὶ ὅσοισιν ἂν ᾖ ἀνωτέρω τῶν φρενῶν τὸ κῦφος, τούτοισι μὲν αἵ τε πλευραὶ οὐκ ἐθέλουσιν ἐς τὸ εὐρὺ αὔξεσθαι, ἀλλὰ ἐς τοὔμπροσθεν, τὸ δὲ στῆθος ὀξὺ γίνεται,

or those filled with mucus, and in what parts severally opening brings death or other damage, these matters will be discussed in another treatise.[1] When, then, one incises the ear, all plasters[2] and all plugging should be avoided. Treat with an application for fresh wounds, or something else neither heavy nor painful. For if the cartilage begins to get denuded and has troublesome abscesses,[3] it is bad, and this is the result of that treatment [viz. plasters and plugging with tents]. Perforating cautery is most effective by itself for all supervening aggravations.

XLI. When the spinal vertebrae are drawn into a hump by diseases, most cases are incurable, especially when the hump is formed above the attachment of the diaphragm. Some of those lower down are resolved when varicosities form in the legs, and still more when these are in the vein at the back of the knee. In cases where curvatures resolve, varicosities may also arise in the groin; and, in some, prolonged dysentery causes resolution. When hump-back occurs in children before the body has completed its growth, the legs and arms attain full size, but the body will not grow correspondingly at the spine; these parts are defective. And where the hump is above the diaphragm, the ribs do not enlarge in breadth, but forwards, and the chest becomes pointed

[1] Not extant.
[2] "Plasters bandaged on": cf. *Wounds in the Head* XVII.
[3] Kw.'s reading.

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[1] Littré, Kw. omit.
[2] ὀχλώδεαι, Kw The MSS. are very confused.

ἀλλ' οὐ πλατύ, αὐτοί τε δύσπνοοι γίνονται καὶ κερχνώδεες· ἧσσον γὰρ εὐρυχωρίην ἔχουσιν αἱ κοιλίαι αἱ τὸ πνεῦμα δεχόμεναι καὶ προπέμπουσαι. καὶ γὰρ δὴ καὶ ἀναγκάζονται κατὰ τὸν μέγαν σπόνδυλον λορδὸν καὶ[1] αὐχένα ἔχειν, ὡς μὴ προπετὴς ᾖ αὐτοῖσι ἡ κεφαλή· στενοχωρίην μὲν οὖν πολλὴν τῇ φάρυγγι παρέχει καὶ τοῦτο ἐς τὸ ἔσω ῥέπον· καὶ γὰρ τοῖσιν ὀρθοῖσι φύσει δύσπνοιαν παρέχει τοῦτο τὸ ὀτσέον, ἢν ἔσω ῥέψῃ, ἔστ' ἂν ἀναπιεχθῇ. δι' οὖν τὸ τοιοῦτον σχῆμα ἐξεχέβρογχοι οἱ τοιοῦτοι τῶν ἀνθρώπων μᾶλλον φαίνονται ἢ οἱ ὑγιέες· φυματίαι τε ὡς ἐπὶ τὸ πολὺ κατὰ τὸν πλεύμονά εἰσιν οἱ τοιοῦτοι σκληρῶν φυμάτων καὶ ἀπέπτων· καὶ γὰρ ἡ πρόφασις τοῦ κυφώματος καὶ ἡ σύντασις τοῖσι πλείστοισι διὰ τοιαύτας συστροφὰς γίνεται, ᾗσιν ἂν κοινωνήσωσιν οἱ τόνοι οἱ σύνεγγυς. ὅσοισι δὲ κατωτέρω τῶν φρενῶν τὸ κύφωμά ἐστι, τούτοισι νοσήματα μὲν ἐνίοισι προσγίνεται νεφριτικὰ καὶ κατὰ κύστιν· ἀτὰρ καὶ ἀποστάσιες ἐμπυηματικαὶ κατὰ κενεῶνας καὶ κατὰ βουβῶνας, χρόνιαι καὶ δυσαλθέες, καὶ τούτων οὐδετέρη λύει τὰ κυφώματα· ἰσχία δὲ τοιούτοισιν ἔτι ἀσαρκότερα γίνεται ἢ τοῖσιν ἄνωθεν κυφοῖσιν· ἡ μέντοι σύμπασα ῥάχις μακροτέρη τούτοισιν ἢ τοῖσιν ἄνωθεν κυφοῖσιν. ἧβη δὲ καὶ γένειον βραδύτερα καὶ ἀτελέστερα, καὶ ἀγονώτεροι οὗτοι τῶν ἄνωθεν κυφῶν. οἷσι δ' ἂν ηὐξημένοισι ἤδη τὸ σῶμα ἡ κύφωσις γένηται, τούτοισι ἀπαντικρὺ μὲν τῆς νούσου τῆς τότε παρεούσης κρίσιν ποιεῖ ἡ

[1] τὸν.

instead of broad; the patients also get short of breath and hoarse, for the cavities which receive and send out the breath have smaller capacity. Besides, they are also obliged to hold the neck concave at the great vertebra,[1] that the head may not be thrown forwards. This, then, causes great constriction in the gullet, since it inclines inwards; for this bone, if it inclines inwards, causes difficult breathing even in undeformed persons, until it is pushed back. In consequence of this attitude, such persons seem to have the larynx more projecting than the healthy. They have also, as a rule, hard and unripened[2] tubercles in the lungs; for the origin of the curvature and contraction is in most cases due to such gatherings, in which the neighbouring ligaments take part. Cases where the curvature is below the diaphragm are sometimes complicated with affections of the kidneys and parts about the bladder, and besides there are purulent abscessions in the lumbar region and about the groins, chronic and hard to cure; and neither of these causes resolution of the curvatures. The hips are still more attenuated in such cases than where the hump is high up; yet the spine as a whole is longer in these than in high curvatures. But the hair on the pubes and chin is later and more defective, and they are less capable of generation than those who have the hump higher up. When curvature comes on in persons whose bodily growth is complete, its occurrence produces an apparent[3] crisis

[1] Axis or second cervical, according to Galen, but perhaps the seventh. Cf. XLV.

[2] Unmatured or softened.

[3] Or, "to begin with": most translators, "obviously."

κύφωσις· ἀνὰ χρόνον μέντοι ἐπισημαίνει τι τῶν αὐτῶν, ὥσπερ καὶ τοῖσι νεωτέροισιν,[1] ἢ πλέον ἢ ἔλασσον· ἧσσον δὲ κακοήθως ὡς τὸ ἐπίπαν μὴν τοιαῦτα πάντα ἐστίν. πολλοὶ μέντοι ἤδη καὶ εὐφόρως ἤνεγκαν καὶ ὑγιεινῶς[2] τὴν κύφωσιν ἄχρι γήραος, μάλιστα δὲ οὗτοι, οἷσιν ἂν ἐς τὸ εὔσαρκον καὶ πιμελῶδες προτράπηται τὸ σῶμα· ὀλίγοι μὴν ἤδη καὶ τῶν τοιούτων ὑπὲρ ἑξήκοντα ἔτη ἐβίωσαν· οἱ δὲ πλεῖστοι βραχυβιώτεροί εἰσιν. ἔστι δ' οἷσι καὶ ἐς τὸ πλάγιον σκολιοῦνται σπόνδυλοι ἢ τῇ ἢ τῇ· πάντα μὴν ἢ τὰ πλεῖστα τὰ τοιαῦτα γίνεται διὰ συστροφὰς τὰς ἔσωθεν τῆς ῥάχιος· προσσυμβάλλεται δὲ ἐνίοισι σὺν τῇ νούσῳ καὶ τὰ σχήματα, ἐφ' ὁποῖα ἂν ἐθισθέωσι κεκλίσθαι. ἀλλὰ περὶ μὲν τούτων ἐν τοῖσι χρονίοισι κατὰ πλεύμονα νοσήμασιν εἰρήσεται· ἐκεῖ γάρ εἰσιν αὐτῶν χαριέσταται προγνώσιες περὶ τῶν μελλόντων ἔσεσθαι.

XLII. Ὅσοισι δ' ἐκ καταπτώσιος ῥάχις κυφοῦται, ὀλίγα δὴ τούτων ἐκρατήθη ὥστε ἐξιθυνθῆναι. τοῦτο μὲν γάρ, αἱ ἐν τῇ κλίμακι κατασείσιες οὐδένα πω ἐξίθυναν, ὧν γε ἐγὼ οἶδα· χρέονται δὲ οἱ ἰητροὶ μάλιστα αὐτῇ οἱ ἐπιθυμέοντες ἐκχαυνοῦν τὸν πολὺν ὄγκον· τοῖσι γὰρ τοιούτοισι ταῦτα θαυμάσιά ἐστιν, ἢν ἢ κρεμάμενον ἴδωσιν ἢ ῥιπτεόμενον, ἢ ὅσα τοῖσι τοιούτοισιν ἔοικε, καὶ ταῦτα κληΐζουσιν αἰεί, καὶ οὐκέτι αὐτοῖσι μέλει ὁποῖόν τι ἀπέβη ἀπὸ τοῦ χειρίσματος, εἴτε κακὸν εἴτε ἀγαθόν. οἱ μέντοι ἰητροὶ οἱ τὰ τοιαῦτα ἐπιτηδεύοντες σκαιοί εἰσιν, οὕς γε ἐγὼ ἔγνων· τὸ μὲν γὰρ ἐπινόημα ἀρχαῖον, καὶ ἐπαινέω ἔγωγε σφόδρα τὸν πρῶτον ἐπι-

in the disease then present. In time, however, some of the same symptoms found in younger patients show themselves to a greater or lesser degree; but in general they are all less malignant. Many patients, too, have borne curvature well and with good health up to old age, especially those whose bodies tend to be fleshy and plump; but few even of these survive sixty years, and the majority are rather short-lived. There are some in whom the vertebrae are curved laterally to one side or the other. All such affections, or most of them, are due to gatherings on the inner side of the spine, while in some cases the positions the patients are accustomed to take in bed are accessory to the malady. But these will be discussed among chronic diseases of the lung; for the most satisfactory prognoses as to their issue come in that department.

XLII. When the hump-back is due to a fall, attempts at straightening rarely succeed. For, to begin with, succussions on a ladder never straightened any case, so far as I know, and the practitioners who use this method are chiefly those who want to make the vulgar herd gape, for to such it seems marvellous to see a man suspended or shaken or treated in such ways; and they always applaud these performances, never troubling themselves about the result of the operation, whether bad or good. As to the practitioners who devote themselves to this kind of thing, those at least whom I have known are incompetent. Yet the contrivance is an ancient one, and for my part I have great admiration for the

[1] *νέοισι.*
[2] *ὑγιηρῶς.*

νοήσαντα καὶ τοῦτο καὶ ἄλλο πᾶν ὅ τι μηχάνημα κατὰ φύσιν ἐπενοήθη· οὐδὲν γάρ μοι ἄελπτον, εἴ τις καλῶς σκευάσας καλῶς κατασείσειε, κἂν ἐξιθυνθῆναι ἔνια. αὐτὸς μέντοι κατῃσχύνθην πάντα τὰ τοιουτότροπα ἰητρεύειν οὕτω, διὰ τοῦτο ὅτι πρὸς ἀπατεώνων μᾶλλον οἱ τοιοῦτοι τρόποι.

XLIII. Ὁπόσοισι μὲν οὖν ἐγγὺς τοῦ αὐχένος ἡ κύφωσις γίνεται, ἧσσον εἰκὸς ὠφελεῖν τὰς κατατάσιας ταύτας τὰς ἐπὶ τὴν κεφαλήν· σμικρὸν γὰρ τὸ βάρος ἡ κεφαλὴ καὶ τὰ ἀκρώμια καταῤῥέποντα· ἀλλὰ τούς γε τοιούτους εἰκὸς ἐπὶ [τοὺς][1] πόδας κατασεισθέντας μᾶλλον ἐξιθυνθῆναι· μέζων γὰρ οὕτως ἡ καταῤῥοπίη ἡ ἐπὶ ταῦτα· ὅσοισι δὲ κατωτέρω τὸ ὕβωμα, τούτοισιν εἰκὸς μᾶλλον ἐπὶ κεφαλὴν κατασείεσθαι. εἰ οὖν τις ἐθέλοι κατασείειν, ὀρθῶς ἂν ὧδε σκευάζοι· τὴν μὲν κλίμακα χρὴ σκυτίνοισιν ὑποκεφαλαίοισι πλαγίοισιν, ἢ ἐρινέοισι, καταστρῶσαι εὖ προσδεδεμένοισιν, ὀλίγῳ πλέον καὶ ἐπὶ μῆκος καὶ ἔνθεν καὶ ἔνθεν, ἢ ὅσον ἂν τὸ σῶμα τοῦ ἀνθρώπου κατάσχοι· ἔπειτα τὸν ἄνθρωπον ὕπτιον κατακλῖναι ἐπὶ τὴν κλίμακα χρή· κἄπειτα προσδῆσαι μὲν τοὺς πόδας παρὰ τὰ σφυρὰ πρὸς τὴν κλίμακα μὴ διαβεβῶτας, δεσμῷ εὐόχῳ μέν, μαλθακῷ δέ προσδῆσαι δὲ κατωτέρω ἑκάτερον τῶν γουνάτων καὶ ἀνωτέρω· προσδῆσαι δὲ καὶ κατὰ τὰ ἰσχία κατὰ δὲ τοὺς κενεῶνας καὶ κατὰ τὸ στῆθος χαλαρῇσι ταινίῃσι[2] περιβαλεῖν οὕτως, ὅπως μὴ κωλύωσι[3] τὴν κατάσεισιν· τὰς δὲ χεῖρας παρὰ τὰς πλευρὰς παρατείναντα προσκαταλαβεῖν πρὸς αὐτὸ τὸ σῶμα, καὶ μὴ πρὸς τὴν κλίμακα. ὅταν

[1] Omit Erm., Kw.

man who first invented it, or thought out any other mechanism in accordance with nature; for I think it is not hopeless, if one has proper apparatus and does the succussion properly, that some cases may be straightened out. For myself, however, I felt ashamed to treat all such cases in this way, and that because such methods appertain rather to charlatans.

XLIII. In cases where the curvature is near the neck, extension of this kind with the head downwards is naturally less effective; for the downward-pulling weight of the head and shoulders is small. Such cases are more likely to be straightened out by succussion with the feet downwards; for the downward pull is greater thus than in the former position. Cases where the hump is lower may more appropriately undergo succussion head downwards. If then one desires to do succussion, the following is the proper arrangement. One should cover the ladder with transverse leather or linen pillows, well tied on, to a rather greater length and breadth than the patient's body will occupy. Next, the patient should be laid on his back upon the ladder; and then his feet should be tied at the ankles to the ladder, without being separated, with a strong but soft band. Fasten besides a band above and below each of the knees, and also at the hips; but the flanks and chest should have bandages passed loosely round them, so as not to interfere with the succussion. Tie also the hands, extended along the sides, to the body itself, and not to the ladder. When you have

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[2] χαλαρῇ τα.νίῃ.
[3] κωλύσει.

δὲ ταῦτα κατασκευάσῃς οὕτως, ἀνέλκειν τὴν κλίμακα ἢ πρὸς τύρσιν τινὰ ὑψηλὴν ἢ πρὸς ἀέτωμα οἴκου· τὸ δὲ χωρίον ἵνα κατασείεις[1] ἀντίτυπον ἔστω· τοὺς δὲ ἀντιτείνοντας εὐπαιδεύ-
30 τους χρὴ εἶναι, ὅπως ὁμαλῶς [καὶ καλῶς][2] καὶ ἰσορρόπως καὶ ἐξαπιναίως ἀφήσουσι, καὶ μήτε ἡ κλῖμαξ ἑτερόρροπος ἐπὶ τὴν γῆν ἀφίξεται, μήτε αὐτοὶ προπετέες ἔσονται. ἀπὸ μέντοι τύρσιος ἀφιεὶς ἢ ἀπὸ ἱστοῦ καταπεπηγότος καρχήσιον ἔχοντος ἔτι κάλλιον ἄν τις σκευάσαιτο, ὥστε ἀπὸ τροχιλίης τὰ χαλώμενα εἶναι ὅπλα ἢ ἀπὸ ὄνου. ἀηδὲς μὴν καὶ μακρολογεῖν περὶ τούτων· ὅμως δὲ ἐκ τούτων ἂν τῶν κατασκευῶν
39 κάλλιστ'[3] ἄν τις κατασεισθείη.

XLIV. Εἰ μέντοι κάρτα ἄνω εἴη τὸ ὕβωμα, δέοι δὲ κατασείειν πάντως, ἐπὶ πόδας κατασείειν λυσιτελεῖ, ὥσπερ ἤδη εἴρηται· πλείων γὰρ οὕτω γίνεται ἡ καταῤῥοπίη ἐπὶ ταῦτα. ἑρμάσαι δὲ χρὴ κατὰ μὲν τὸ στῆθος πρὸς τὴν κλίμακα προσδήσαντα ἰσχυρῶς, κατὰ δὲ τὸν αὐχένα ὡς χαλαρωτάτῃ ταινίῃ, ὅσον τοῦ κατορθοῦσθαι εἵνεκα· καὶ αὐτὴν τὴν κεφαλὴν κατὰ τὸ μέτωπον προσδῆσαι πρὸς τὴν κλίμακα· τὰς δὲ χεῖρας
10 παρατανύσαντα πρὸς τὸ σῶμα προσδῆσαι, καὶ μὴ πρὸς τὴν κλίμακα· τὸ μέντοι ἄλλο σῶμα ἄδετον εἶναι χρή, πλήν, ὅσον τοῦ κατορθοῦσθαι εἵνεκα, ἄλλῃ καὶ ἄλλῃ ταινίῃ χαλαρῇ περιβεβλῆσθαι· ὅπως δὲ μὴ κωλύωσιν οὗτοι οἱ δεσμοὶ τὴν κατάσεισιν, σκοπεῖν· τὰ δὲ σκέλεα πρὸς μὲν τὴν κλίμακα μὴ προσδεδέσθω, πρὸς ἄλληλα δέ, ὡς κατὰ τὴν ῥάχιν ἰθύῤῥοπα ᾖ. ταῦτα μέντοι τοιουτοτρόπως ποιητέα, εἰ πάντως

arranged things thus, lift the ladder against some high tower or house-gable. The ground where you do the succussion should be solid, and the assistants who lift well trained, that they may let it down smoothly, neatly, vertically, and at once, so that neither the ladder shall come to the ground unevenly, nor they themselves be pulled forwards. When it is let down from a tower, or from a mast fixed in the ground and provided with a truck, it is a still better arrangement to have lowering tackle from a pulley or wheel and axle. It is truly disagreeable to enlarge on these matters; but all the same, succussion would be best done by aid of this apparatus.[1]

XLIV. If the hump is very high up and succussion absolutely required, it is advantageous to do it towards the feet, as was said before; for in this direction the downward impulsion is greater. One should fix the patient by binding him to the ladder firmly at the chest, but at the neck with the loosest possible band sufficient to keep it straight; bind the head itself also to the ladder at the forehead. Extend the arms along, and fasten them to, the body, not to the ladder. The rest of the body should not be tied, except in so far as is requisite to keep it vertical with a loose band round it here and there. But see that these attachments do not hinder the succussion. Do not fasten the legs to the ladder, but to one another, that they may hang in a straight line with the back. This is the sort of thing that

[1] Surgeons will remember that methods no less violent than these and those described below were practised for a time on high authority at the end of last century.

[1] καταστέλσεις. [2] Apoll., Galen, but most omit. [3] μάλιστα.

δέοι ἐν κλίμακι κατασεισθῆναι· αἰσχρὸν μέντοι καὶ ἐν πάσῃ τέχνῃ, καὶ οὐχ ἥκιστα ἐν ἰατρικῇ, πολὺν ὄχλον καὶ πολλὴν ὄψιν καὶ πολὺν λόγον παρασχόντα, ἔπειτα μηδὲν ὠφελῆσαι.

XLV. Χρὴ δὲ πρῶτον μὲν γινώσκειν τὴν φύσιν τῆς ῥάχιος, οἵη τίς ἐστιν· ἐς πολλὰ γὰρ νουσήματα προσδέοι ἂν αὐτῆς. τοῦτο μὲν γάρ, τὸ πρὸς τὴν κοιλίην ῥέπον οἱ σπόνδυλοι ἐντὸς ἄρτιοί εἰσιν ἀλλήλοισι, καὶ δέδενται πρὸς ἀλλήλοις δεσμῷ μυξώδει καὶ νευρώδει, ἀπὸ χόνδρων ἀποπεφυκότι ἄχρι πρὸς τὸν νωτιαῖον. ἄλλοι δέ τινες τόνοι νευρώδεες διανταῖοι πρόσφυτοι παρατέτανται ἔνθεν καὶ ἔνθεν αὐτῶν. αἱ δὲ φλεβῶν καὶ ἀρτηρίων κοινωνίαι ἐν ἑτέρῳ λόγῳ δεδηλώσονται, ὅσαι τε καὶ οἷαι, καὶ ὅθεν ὡρμημέναι, καὶ ἐν οἵοισιν[1] οἷα δύνανται, αὐτὸς δὲ ὁ νωτιαῖος οἷσιν ἐλύτρωται ἐλύτροισιν καὶ ὅθεν ὡρμημένοισι, καὶ ὅπη κραίνουσι καὶ οἷσιν κοινωνέουσι, καὶ οἷα δυναμένοισιν· ἐν δὲ τῷ ἐπέκεινα ἐν ἄρθροισι γεγιγγλύμωνται πρὸς ἀλλήλους οἱ σπόνδυλοι. τόνοι δὲ κοινοὶ παρὰ πάντας καὶ ἐν τοῖσιν ἔξω μέρεσι καὶ ἐν τοῖσιν ἔσω παρατέτανται· ἀπόφυσίς τέ ἐστιν ὀστέου ἐς τὸ ἔξω μέρος ἀπὸ πάντων τῶν σπονδύλων, μία ἀπὸ ἑνὸς ἑκάστου, ἀπό τε τῶν μεζόνων ἀπό τε τῶν ἐλασσόνων· ἐπὶ δὲ τῇσιν ἀποφύσεσι ταύτῃσι χονδρίων ἐπιφύσιες, καὶ ἀπ' ἐκείνων νεύρων ἀποβλάστησις ἠδελφισμένη τοῖσιν ἐξωτάτω τόνοισιν. πλευραὶ δὲ προσπεφύκασιν, ἐς τὸ ἔσω μέρος τὰς κεφαλὰς ῥέπουσαι μᾶλλον ἢ ἐς τὸ ἔξω· καθ' ἕνα δὲ ἕκαστον τῶν σπονδύλων προσήρθρωνται· καμπυλώταται δὲ πλευραὶ ἀν-

[1] οἷς.

must be done if succussion on a ladder is absolutely required; but it is disgraceful in any art, and especially in medicine, to make parade of much trouble, display, and talk, and then do no good.

XLV. One should first get a knowledge of the structure of the spine; for this is also requisite for many diseases. Now on the side turned towards the body cavity, the vertebrae are fitted evenly to one another and bound together by a mucous and ligamentous connection extending from the cartilages right to the spinal cord.[1] There are also certain ligamentous cords extending all along, attached on either side of them. The communications of the veins and arteries will be described elsewhere as regards their number, nature, origin, and functions; also the spinal cord itself with its coverings, their origin, endings, connections and functions. Posteriorly, the vertebrae are connected with one another by hinge-like joints. Cords common to them all are stretched along both the inner and outer sides.[2] From every vertebra there is an outgrowth (apophysis) of bone posteriorly [lit. "to the outer part"], one from each, both the larger and smaller; upon the apophyses are epiphyses of cartilage, and from these there is an outgrowth of tendons, which are in relation with the outermost cords. The ribs are articulated severally with each of the vertebrae, their heads being disposed rather inwards (forwards) than outwards (backwards). Man's ribs are the most curved,

[1] Intervertebral cartilage: reference to its mucous centre and cartilaginous anterior layer.

[2] Both these and those mentioned above seem to be the anterior and posterior common ligaments. "Inner" and "outer" = our "front" and "back."

θρώπου εἰσὶ ῥαιβοειδέα τρόπον. τὸ δὲ μεσηγὺ τῶν πλευρέων καὶ τῶν ὀστέων τῶν ἀποπεφυκότων ἀπὸ τῶν σπονδύλων ἀποπληρέουσιν ἑκατέρωθεν οἱ μύες ἀπὸ τοῦ αὐχένος ἀρξάμενοι, ἄχρι τῆς προσφύσιος. αὐτὴ δὲ ἡ ῥάχις κατὰ μῆκος ἰθυσκόλιός ἐστιν· ἀπὸ μὲν τοῦ ἱεροῦ ὀστέου ἄχρι τοῦ μεγάλου σπονδύλου, παρ' ὃν προσήρτηται τῶν σκελέων ἡ πρόσφυσις, ἄχρι μὲν τούτου κυφή· κύστις τε γὰρ καὶ γοναὶ καὶ ἀρχοῦ τὸ χαλαρὸν ἐν τούτῳ ἔκτισται. ἀπὸ δὲ τούτου ἄχρι φρενῶν προσαρτήσιος, ἰθυλόρδη· καὶ παραφύσιας ἔχει μυῶν τοῦτο μοῦνον τὸ χωρίον ἐκ τῶν ἔσωθεν μερῶν, ἃς δὴ καλοῦσιν ψόας. ἀπὸ δὲ τούτου ἄχρι τοῦ μεγάλου σπονδύλου τοῦ ὑπὲρ τῶν ἐπωμίδων, ἰθυκύφη· ἔτι δὲ μᾶλλον δοκεῖ ἤ ἐστιν· ἡ γὰρ ἄκανθα κατὰ μέσον ὑψηλοτάτας τὰς ἐκφύσιας τῶν ὀστέων ἔχει, ἔνθεν δὲ καὶ ἔνθεν ἐλάσσους. αὐτὸ δὲ τὸ ἄρθρον τὸ τοῦ αὐχένος λορδόν ἐστιν.

XLVI. Ὁπόσοισι μὲν οὖν κυφώματα γίνεται κατὰ τοὺς σπονδύλους, ἔξωσις μὲν μεγάλη ἀπορραγεῖσα ἀπὸ τῆς συμφύσιος ἢ ἑνὸς σπονδύλου ἢ καὶ πλεόνων οὐ μάλα πολλοῖσι γίνεται, ἀλλ' ὀλίγοισι. οὐδὲ γὰρ τὰ τρώματα τὰ τοιαῦτα ῥηΐδιον γίνεσθαι· οὔτε γὰρ ἐς τὸ ἔξω ἐξωσθῆναι ῥηΐδιόν ἐστιν, εἰ μὴ ἐκ τοῦ ἔμπροσθεν ἰσχυρῷ τινὶ τρωθείη διὰ τῆς κοιλίης (οὕτω δ' ἂν ἀπόλοιτο), ἢ εἴ τις ἀφ' ὑψηλοῦ του χωρίου πεσὼν ἐρείσειε τοῖσιν ἰσχίοισιν ἢ τοῖσιν ὤμοισιν (ἀλλὰ καὶ οὕτως ἂν ἀποθάνοι, παραχρῆμα δὲ οὐκ ἂν ἀποθάνοι)· ἐκ δὲ τοῦ ὄπισθεν οὐ ῥηΐδιον τοιαύτην ἔξαλσιν γενέσθαι ἐς τὸ ἔσω, εἰ μὴ ὑπερβαρύ τι ἄχθος ἐμπέσοι· τῶν τε γὰρ ὀστέων τῶν ἐκπεφυκότων ἔξω ἓν

and they are bandy-shaped. As to the part between the ribs and the bony outgrowths (apophyses) of the vertebrae, it is filled on each side by the muscles which begin at the neck and extend to the attachment[1] [of the diaphragm]. The spine itself is curved vertically through its length. From the sacrum to the great vertebra,[2] near which the origin of the legs is inserted, all this is curved outwards; for the bladder, generative organs, and loose part of the rectum are lodged there. From this point to the attachment of the diaphragm it curves inwards; and this part only of the inside has attachments of muscles, which they call "psoai." From this to the great vertebra[3] over the shoulder-blades it is curved outwards, and seems to be more so than it is; for the ridge has the outgrowths of bone highest here, while above and below they are smaller. The articulation of the neck itself is curved inwards.

XLVI. In cases then of outward curvature at the vertebrae, a great thrusting-out and rupture of the articulation of one or more of them does not very often occur, but is rare. Such injuries, indeed, are hard to produce; nor is it easy for outward thrusting to be brought about, unless a man were violently wounded from the front through the body cavity—and then he would perish—or if a man falling from a height came down on his buttocks or shoulders—but then he would die also, though he might not die at once. And from behind it would not be easy for such sudden luxation to take place inwards, unless some very heavy weight fell on the spine; for each of the external bony epiphyses is of

[1] "To their attachment" (Petrequin).
[2] Fifth lumbar. [3] Seventh cervical.

ἕκαστον τοιοῦτόν ἐστιν, ὥστε πρόσθεν ἂν αὐτὸ καταγῆναι πρὶν ἢ μεγάλην ῥοπὴν ἔσω ποιῆσαι, τούς τε συνδέσμους βιησάμενον καὶ τὰ ἄρθρα τὰ ἐνηλλαγμένα. ὅ τε αὖ νωτιαῖος πονοίη ἄν, εἰ ἐξ ὀλίγου χωρίου τὴν περικαμπὴν ἔχοι, τοιαύτην ἔξαλσιν ἐξαλλομένου σπονδύλου· ὅ τε ἐκπηδήσας σπόνδυλος πιέζοι ἂν τὸν νωτιαῖον, εἰ μὴ καὶ ἀποῤῥήξειεν. πιεχθεὶς δ' ἂν καὶ ἀπολελαμμένος πολλῶν ἂν καὶ μεγάλων καὶ ἐπικαίρων ἀπονάρκωσιν ποιήσειεν· ὥστε οὐκ ἂν μέλοι τῷ ἰητρῷ ὅπως χρὴ τὸν σπόνδυλον κατορθῶσαι, πολλῶν καὶ βιαίων ἄλλων κακῶν παρεόντων. ὥστε δὴ οὐδ' ἐμβαλεῖν οἷόν τε πρόδηλον τὸν τοιοῦτον οὔτε κατασείσει οὔτε ἄλλῳ τρόπῳ οὐδενί, εἰ μή τις διαταμὼν τὸν ἄνθρωπον, ἔπειτα ἐσμασάμενος ἐς τὴν κοιλίην, ἐκ τοῦ ἔσωθεν τῇ χειρὶ ἐς τὸ ἔξω ἀντωθέοι· καὶ τοῦτο νεκρῷ μὲν οἷόν τε ποιεῖν, ζῶντι δὲ οὐ πάνυ. διὰ τί οὖν ταῦτα γράφω; ὅτι οἴονταί τινες ἰητρευκέναι ἀνθρώπους οἷσιν ἔσωθεν ἐνέπεσον σπόνδυλοι, τελέως ὑπερβάντες τὰ ἄρθρα· καίτοι γε ῥηΐστην ἐς τὸ περιγενέσθαι τῶν διαστροφέων ταύτην ἔνιοι νομίζουσι καὶ οὐδὲν δεῖσθαι ἐμβολῆς, ἀλλὰ αὐτόματα ὑγιέα γίνεσθαι τὰ τοιαῦτα. ἀγνοέουσι δὴ πολλοί, καὶ κερδαίνουσιν ὅτι ἀγνοέουσι· πείθουσι γὰρ τοὺς πέλας. ἐξαπατῶνται δὲ διὰ τόδε· οἴονται γὰρ τὴν ἄκανθαν τὴν ἐξέχουσαν κατὰ τὴν ῥάχιν ταύτην τοὺς σπονδύλους αὐτοὺς εἶναι, ὅτι στρογγύλον αὐτῶν ἕκαστον φαίνεται ψαυόμενον, ἀγνοεῦντες ὅτι τὰ ὀστέα ταῦτά ἐστι τὰ ἀπὸ τῶν σπονδύλων πεφυκότα, περὶ ὧν ὁ λόγος ὀλίγῳ πρόσθεν εἴρηται· οἱ δὲ σπόνδυλοι πολὺ προσω-

such a nature as to be fractured itself before overcoming the ligaments and intereonnecting joints and making a great deviation inwards. The spinal cord, too, would suffer, if the luxation due to jerking out of a vertebra had made so sharp a curve; and the vertebra in springing out would press on the cord, even if it did not break it. The cord, then, being compressed and intercepted, would produce complete narcosis of many large and important parts, so that the physician would not have to trouble about how to adjust the vertebra, in the presence of many other urgent complications. So, then, the impossibility of reducing such a dislocation either by succussion or any other method is obvious, unless after cutting open the patient, one inserted the hand into the body cavity and made pressure from within outwards. One might do this with a corpse, but hardly with a living patient. Why then am I writing this? Because some think they have cured patients whose vertebrae had fallen inwards with complete disarticulation; and there are even some also who think this is the easiest distortion to recover from, not even requiring reduction, but that such injuries get well of themselves. There are many ignorant practitioners; and they profit by their ignorance, for they get credit with their neighbours. Now this is how they are deceived. They think that the projecting ridge along the spine represents the vertebrae themselves, because each of the processes feels rounded on palpation; not knowing that these bones are the natural outgrowths from the vertebrae which were discussed a little above. But

τέρω ἄπεισιν· στενοτάτην γὰρ πάντων τῶν ζώων ὤνθρωπος κοιλίην ἔχει, ὡς ἐπὶ τῷ μεγέθει, ἀπὸ τοῦ ὄπισθεν ἐς τὸ ἔμπροσθεν, ποτὶ καὶ κατὰ τὸ
50 στῆθος. ὅταν οὖν τι τούτων τῶν ὀστέων τῶν ὑπερεχόντων ἰσχυρῶς καταγῇ, ἤν τε ἓν ἤν τε πλείω, ταύτῃ ταπεινότερον τὸ χωρίον γίνεται ἢ τὸ ἔνθεν καὶ ἔνθεν, καὶ διὰ τοῦτο ἐξαπατῶνται, οἰόμενοι τοὺς σπονδύλους ἔσω οἴχεσθαι. προσεξαπατᾷ δὲ ἔτι αὐτοὺς καὶ τὰ σχήματα τῶν τετρωμένων· ἢν μὲν γὰρ πειρῶνται καμπύλλεσθαι, ὀδυνῶνται, περιτενέος γινομένου ταύτῃ τοῦ δέρματος ᾗ τέτρωνται, καὶ ἅμα τὰ ὀστέα τὰ κατεηγότα ἐνθράσσει οὕτω μᾶλλον τὸν χρῶτα. ἢν δὲ
60 λορδαίνωσι, ῥᾴους εἰσίν· χαλαρώτερον γὰρ τὸ δέρμα κατὰ τὸ τρῶμα ταύτῃ γίνεται, καὶ τὰ ὀστέα ἧσσον ἐνθράσσει· ἀτὰρ καὶ ἤν τις ψαύῃ αὐτῶν, κατὰ τοῦτο ὑπείκουσι λορδοῦντες, καὶ τὸ χωρίον κενεὸν καὶ μαλθακὸν ψαυόμενον ταύτῃ φαίνεται. ταῦτα πάντα τὰ εἰρημένα προσεξαπατᾷ τοὺς ἰητρούς. ὑγιέες δὲ ταχέως καὶ ἀσινέες αὐτόματοι οἱ τοιοῦτοι γίνονται· ταχέως γὰρ πάντα τὰ τοιαῦτα ὀστέα ἐπιπωροῦται, ὅσα
69 χαῦνά ἐστιν.

XLVII. Σκολιαίνεται μὲν οὖν ῥάχις καὶ ὑγιαίνουσι κατὰ πολλοὺς τρόπους· καὶ γὰρ ἐν τῇ φύσει καὶ ἐν τῇ χρήσει οὕτως ἔχει· ἀτὰρ καὶ ὑπὸ γήραος καὶ ὑπὸ ὀδυνημάτων[1] συνδοτική ἐστιν. αἱ δὲ δὴ κυφώσιες αἱ ἐν τοῖσι πτώμασιν ὡς ἐπὶ τὸ πολὺ γίνονται, ἢν ἢ τοῖσιν ἰσχίοισιν ἐρείσῃ ἢ ἐπὶ τοὺς ὤμους πέσῃ. ἀνάγκη γὰρ ἔξω φαίνεσθαι ἐν τῷ κυφώματι ἕνα μέν τινα ὑψηλότερον τῶν σπονδύλων, τοὺς δὲ ἔνθεν καὶ ἔνθεν ἐπὶ ἧσσον·

the vertebrae are much farther in front; for man has the narrowest body cavity of all animals relatively to his size and measured from behind forwards, especially in the thoracic region. Whenever, therefore, there is a violent fracture of these projecting processes, either one or more, the part is more depressed there than on either side; and therefore they are deceived, and think the vertebrae have gone inwards. And the attitudes of the patients help to deceive them still more; for if they try to bend forwards, they suffer pain, the skin being stretched at the level of the injury, while at the same time the fractured bones disturb the flesh more; but if they hollow their backs, they are easier, for thereby the skin gets more relaxed at the wound, and the bones cause less disturbance. Again, if one feels them, they shrink at the part, and bend inwards; and the region appears hollow and soft on palpation. All these things contribute to deceive the physicians, while such patients recover of themselves quickly and without damage; for callus forms rapidly on all bones of this kind, by reason of their being porous.

XLVII. Curvature of the spine occurs even in healthy persons in many ways, for such a condition is connected with its nature and use; and besides, there is a giving way in old age, and on account of pain. But the outward curvatures due to falls usually occur when the patient comes down on his buttocks or falls on his shoulders; and, in the curvature, one of the vertebrae necessarily appears to stand out more prominently, and those on either

[1] ὀδύνης Kw.

οὔκουν εἷς ἐπὶ πολὺ ἀποπεπηδηκὼς ἀπὸ τῶν ἄλλων ἐστίν, ἀλλὰ σμικρὸν ἕκαστος συνδιδοῖ, ἀθρόον δὲ πολὺ φαίνεται. διὰ οὖν τοῦτο καὶ ὁ νωτιαῖος μυελὸς εὐφόρως φέρει τὰς τοιαύτας διαστροφάς, ὅτι κυκλώδης αὐτῷ ἡ διαστροφὴ γίνεται, ἀλλ᾽ οὐ γωνιώδης.

Χρὴ δὲ τὴν κατασκευὴν τοῦ διαναγκασμοῦ τοιήνδε κατασκευάσαι. ἔξεστι μὲν ξύλον ἰσχυρὸν καὶ πλατύ, ἐντομὴν παραμηκέα ἔχον, κατορύξαι· ἔξεστι δὲ ἀντὶ τοῦ ξύλου ἐν τοίχῳ ἐντομὴν παραμηκέα ἐνταμεῖν, ἢ πήχει ἀνωτέρω τοῦ ἐδάφεος, ἢ ὅπως ἂν μετρίως ἔχῃ· ἔπειτα οἷον στύλον δρύϊνον τετράγωνον πλάγιον παραβάλλειν, ἀπολείποντα ἀπὸ τοῦ τοίχου ὅσον παρελθεῖν τινά, ἢν δέῃ· καὶ ἐπὶ μὲν τὸν στύλον ἐπιστορέσαι ἢ χλαίνας ἢ ἄλλο τι, ὃ μαλθακὸν μὲν ἔσται, ὑπείξει δὲ μὴ μέγα· τὸν δὲ ἄνθρωπον πυρίησαι, ἢν ἐνδέχηται, ἢ πολλῷ θερμῷ λοῦσαι· κἄπειτα πρηνέα κατακλῖναι κατατεταμένον, καὶ τὰς μὲν χεῖρας αὐτοῦ παρατείναντα κατὰ φύσιν προσδῆσαι πρὸς τὸ σῶμα, ἱμάντι δὲ μαλθακῷ, ἱκανῶς πλατεῖ τε καὶ μακρῷ, ἐκ δύο διανταίων συμβεβλημένῳ μέσῳ, κατὰ μέσον δὲ τὸ στῆθος δὶς περιβεβλῆσθαι χρὴ ὡς ἐγγυτάτω τῶν μασχαλέων· ἔπειτα τὸ περισσεῦον τῶν ἱμάντων κατὰ τὴν μασχάλην ἑκάτερον περὶ τοὺς ὤμους περιβεβλῆσθω· ἔπειτα αἱ ἀρχαὶ πρὸς ξύλον ὑπεροειδές τι προσδεδέσθωσαν, ἁρμόζουσαι τὸ μῆκος τῷ ξύλῳ τῷ ὑποτεταμένῳ, πρὸς ὅ τι πρόσβαλλον τὸ ὑπεροειδὲς ἀντιστηρίζοντα κατατείνειν. τοιούτῳ δέ τινι ἑτέρῳ δεσμῷ χρὴ ἄνωθεν τῶν γουνάτων δήσαντα καὶ ἄνωθεν τῶν πτερνέων τὰς ἀρχὰς τῶν ἱμάντων πρὸς τοιοῦτόν

side less so. It is not that one has sprung out to a distance from the rest; but each gives way a little, and the displacement taken altogether seems great. This is why the spinal marrow does not suffer from such distortion, because the distortion affecting it is curved and not angular.[1]

The apparatus for forcible reduction should be arranged as follows. One may fix in the ground a strong broad plank having in it a transverse groove. Or, instead of the plank, one may cut a transverse groove in a wall, a cubit above the ground, or as may be convenient. Then place a sort of quadrangular oak board parallel with the wall and far enough from it that one may pass between if necessary; and spread cloaks on the board, or something that shall be soft, but not very yielding. Give the patient a vapour bath if possible, or one with plenty of hot water; then make him lie stretched out in a prone position, and fasten his arms, extending them naturally, to the body. A soft band, sufficiently broad and long, composed of two strands, should be applied at its middle to the middle of the chest, and passed twice round it as near as possible to the armpits; then let what remains of the (two) bands be passed round the shoulders at each side, and the ends be attached to a pestle-shaped pole, adjusting their length to that of the underlying board against which the pestle-shaped pole is put, using it as a fulcrum to make extension. A second similar band should be attached above the knees and above the heels, and the ends of the straps fastened to

[1] In spite of this, the strange contradiction "angular curvature" has come to be the technical term for hump-back.

τι ξύλον προσδῆσαι· ἄλλῳ δὲ ἱμάντι πλατεῖ καὶ μαλθακῷ καὶ δυνατῷ, ταινιοειδεῖ, πλάτος ἔχοντι καὶ μῆκος ἱκανόν, ἰσχυρῶς περὶ τὰς ἰξύας κύκλῳ περιδεδέσθαι ὡς ἐγγύτατα τῶν ἰσχίων· ἔπειτα τὸ περισσεῦον τῆς ταινιοειδέος, ἅμα ἀμφοτέρας τὰς ἀρχὰς τῶν ἱμάντων, πρὸς τὸ ξύλον προσδῆσαι τὸ πρὸς τῶν ποδῶν· κἄπειτα κατατείνειν ἐν τούτῳ τῷ σχήματι ἔνθα καὶ ἔνθα, ἅμα μὲν ἰσορρόπως, ἅμα δὲ ἐς ἰθύ. οὐδὲν γὰρ ἂν μέγα κακὸν ἡ τοιαύτη κατάτασις ποιήσειεν, εἰ χρηστῶς σκευασθείη,[1] εἰ μὴ ἄρα ἐξεπίτηδές τις βούλοιτο σίνεσθαι. τὸν δὲ ἰητρὸν χρὴ ἢ ἄλλον, ὅστις ἰσχυρὸς καὶ μὴ ἀμαθής, ἐπιθέντα τὸ θέναρ τῆς χειρὸς ἐπὶ τὸ ὕβωμα, καὶ τὴν ἑτέρην χεῖρα προσεπιθέντα ἐπὶ τὴν ἑτέρην, καταναγκάζειν, προσσυνιέντα ἢν τε ἐς ἰθὺ ἐς τὸ κάτω πεφύκῃ καταναγκάζεσθαι, ἤν τε πρὸς τῆς κεφαλῆς, ἤν τε πρὸς τῶν ἰσχίων. καὶ ἀσινεστάτη μὲν αὕτη ἡ ἀνάγκη· ἀσινὲς δὴ καὶ ἐπικαθέζεσθαί τινα ἐπὶ τὸ κύφωμα, αὐτοῦ ἅμα κατατεινομένου, καὶ ἐνσεῖσαι μετεωρισθέντα. ἀτὰρ καὶ ἐπιβῆναι τῷ ποδὶ καὶ ὀχηθῆναι ἐπὶ τὸ κύφωμα· ἡσύχως τε ἐπενσεῖσαι οὐδὲν κωλύει· τὸ τοιοῦτον δὲ ποιῆσαι μετρίως ἐπιτήδειος ἄν τις εἴη τῶν ἀμφὶ παλαίστρην εἰθισμένων. δυνατωτάτη μέντοι τῶν ἀναγκέων ἐστίν, εἰ ὁ μὲν τοῖχος ἐντετμημένος ἢ τὸ δὲ ξύλον τὸ κατωρυγμένον, ᾗ ἐντέτμηται, κατωτέρω εἴη τῆς ῥάχιος τοῦ ἀνθρώπου, ὁπόσῳ ἂν δοκῇ μετρίως ἔχειν, σανὶς δὲ φιλυρίνη, μὴ λεπτή, ἐνείη, ἢ καὶ ἄλλου τινὸς ξύλου· ἔπειτα ἐπὶ μὲν τὸ ὕβωμα ἐπιτεθείη ἢ τρύχιόν τι πολύπτυχον ἢ σμικρόν τι σκύτινον ὑποκεφάλαιον· ὡς ἐλάχιστα μὴν ἐπικεῖσθαι

a similar pole. With another soft, strong strap, like a head-band, of sufficient breadth and length, the patient should be bound strongly round the loins, as near as possible to the hips. Then fasten what is over of this band, as well as the ends of both the other straps, to the pole at the foot end; next, make extension in this position towards either end simultaneously, equally and in a straight line. Such extension would do no great harm, if well arranged, unless indeed one deliberately wanted to do harm. The physician, or an assistant who is strong and not untrained, should put the palm of his hand on the hump, and the palm of the other on that, to reduce it forcibly, taking into consideration whether the reduction should naturally be made straight downwards, or towards the head, or towards the hips. This reduction method also is very harmless; indeed, it will do no harm even if one sits on the hump while extension is applied, and makes succussion by raising himself; nay, there is nothing against putting one's foot on the hump and making gentle succussion by bringing one's weight upon it. A suitable person to perform such an operation properly would be one of those habituated to the palaestra. But the most powerful method of reduction is to have the incision in the wall, or that in the post embedded in the ground, at an appropriate level, rather below that of the patient's spine, and a not too thin plank of lime or other wood inserted in it. Then let many thicknesses of cloth or a small leather pillow be put on the hump. It is well that

[1] σκευασθῇ.

συμφέρει, μόνον προμηθεόμενον ὡς μὴ ἡ σανὶς ὑπὸ σκληρότητος ὀδύνην παρὰ καιρὸν προσπαρέχῃ· κατ' ἴξιν δὲ ἔστω ὡς μάλιστα τῇ ἐντομῇ τῇ ἐς τὸν τοῖχον τὸ ὕβωμα, ὡς ἂν ἡ σανίς, ᾗ μάλιστα ἐξέστηκε, ταύτῃ μάλιστα πιέζῃ ἐπιτεθεῖσα. ὅταν δὲ ἐπιτεθῇ, τὸν μέν τινα καταναγκάζειν χρὴ τὸ ἄκρον τῆς σανίδος, ἦν τε ἕνα δέῃ ἦν τε δύο, τοὺς δὲ κατατείνειν [1] τὸ σῶμα κατὰ μῆκος, ὡς πρόσθεν εἴρηται, τοὺς μὲν τῇ, τοὺς δὲ τῇ. ἔξεστι δὲ καὶ ὀνίσκοισι τὴν κατάτασιν ποιεῖσθαι, ἢ παρακατορύξαντα παρὰ τὸ ξύλον, ἢ ἐν αὐτῷ τῷ ξύλῳ τὰς φλιὰς τῶν ὀνίσκων ἐντεκτηνάμενον, ἦν τε ὀρθὰς ἐθέλῃς, ἑκατέρωθεν σμικρὸν ὑπερεχούσας, ἥ τε κατὰ κορυφὴν τοῦ ξύλου ἔνθεν καὶ ἔνθεν. αὗται αἱ ἀνάγκαι εὐταμίευτοί εἰσι καὶ ἐς τὸ ἰσχυρότερον καὶ ἐς τὸ ἧσσον, καὶ ἰσχὺν ἔχουσι τοιαύτην, ὥστε καὶ εἴ τις ἐπὶ λύμῃ βούλοιτο, ἀλλὰ μὴ ἐπὶ ἰητρείῃ, ἐς τοιαύτας ἀνάγκας ἀγαγεῖν κἂν [2] τούτῳ ἰσχυρῶς δύνασθαι· καὶ γὰρ ἂν κατατείνων κατὰ μῆκος μοῦνον ἔνθεν καὶ ἔνθεν οὕτω καὶ ἄλλην ἀνάγκην οὐδεμίην προστιθείς, ὅμως κατατείνειεν ἄν τις· ἀλλὰ μὴν καὶ ἢν μὴ κατατείνων, αὐτῇ δὲ μοῦνον τῇ σανίδι οὕτως ἱποίη τις, καὶ οὕτως ἂν [ἱκανῶς] [3] καταναγκάσειεν. καλαὶ οὖν αἱ τοιαῦται ἰσχύες εἰσίν, ᾗσιν ἔξεστι καὶ ἀσθενεστέρῃσι καὶ ἰσχυροτέρῃσι χρῆσθαι αὐτὸν ταμιεύοντα. καὶ μὲν δὴ καὶ κατὰ φύσιν γε ἀναγκάζουσι· τὰ μὲν γὰρ ἐξεστεῶτα ἐς τὴν χώρην ἀναγκάζει ἡ ἴπωσις ἰέναι, τὰ δὲ συνελληλυθότα κατὰ φύσιν κατατείνουσι αἱ κατὰ φύσιν κατατάσιες. οὔκουν [ἐγὼ] [4] ἔχω τούτων ἀνάγκας

[1] κατατανύειν. [2] καὶ ἐν.
[3] Kw. omits. [4] Kw. omits.

it should be as small as possible, only sufficient to prevent the plank from causing needless additional pain by its hardness. Let the hump come as nearly as possible in line with the groove in the wall, so that the plank, when in place, makes most pressure on the most projecting part. When it is put in place, an assistant, or two if necessary, should press down the extremity of the plank, while others extend the body lengthwise, some at one end, some at the other, as was described above. But it is possible to make extension by wheel and axle, either embedded in the earth by the board, or with the supports of the axle carpentered on to the board itself: either projecting upwards a little, if you like, or on the top of the board at each end.[1] This reduction apparatus is easy to regulate as regards greater or less force, and has such power that, if one wanted to use such forcible manœuvres for harm and not for healing, it is able to act strongly in this way also. For even by making traction lengthwise, only at both ends and without any other additional force, one would produce extension. On the other hand, if, without making traction, one only pressed downwards with the plank in this way, one would get reduction thus also. Such forces, then, are good where it is possible for the operator to regulate their use as to weaker or stronger, and, what is more, they are exerted in accordance with nature; for the pressure forces the protruding parts into place, and the extensions according to nature draw asunder naturally the parts which have come together. For my part, then, I know no better or more correct modes of

[1] (?) Projecting horizontally.

καλλίους οὐδὲ δικαιοτέρας· ἡ γὰρ κατ᾽ αὐτὴν τὴν
ἄκανθαν ἰθυωρίη τῆς κατατάσιος κάτωθέν τε καὶ
κατὰ τὸ ἱερὸν ὀστέον καλεόμενον οὐκ ἔχει ἐπιλα-
βὴν οὐδεμίην· ἄνωθεν δὲ κατὰ τὸν αὐχένα καὶ
110 κατὰ τὴν κεφαλὴν ἐπιλαβὴν μὲν ἔχει, ἀλλ᾽
ἐσιδέειν γε ἀπρεπὴς ταύτῃ τοι γινομένη ἡ κατά-
τασις καὶ ἄλλας βλάβας ἂν προσπαρέχοι
πλεονασθεῖσα. ἐπειρήθην δὲ δή ποτε ὕπτιον τὸν
ἄνθρωπον κατατείνειν, ἀσκὸν ἀφύσητον ὑποθεὶς
ὑπὸ τὸ ὕβωμα· κἄπειτα αὐλῷ ἐκ χαλκείου ἐς τὸν
ἀσκὸν τὸν ὑποκείμενον ἐνιέναι φυσᾶν· ἀλλά μοι
οὐκ εὐπορεῖτο· ὅτε μὲν γὰρ εὖ κατατείνοιμι τὸν
ἄνθρωπον, ἠσσᾶτο ὁ ἀσκός, καὶ οὐκ ἠδύνατο ἡ
φῦσα ἐσαναγκάζεσθαι· καὶ ἄλλως ἕτοιμον περιο-
120 λισθάνειν ἦν, ἅτε ἐς τὸ αὐτὸ ἀναγκαζόμενον
τό τε τοῦ ἀνθρώπου ὕβωμα καὶ τὸ τοῦ ἀσκοῦ
πληρουμένου κύρτωμα. ὅτε δ᾽ αὖ μὴ κάρτα
κατατείνοιμι τὸν ἄνθρωπον, ὁ μὲν ἀσκὸς ὑπὸ τῆς
φύσης ἐκυρτοῦτο· ὁ δὲ ἄνθρωπος πάντη μᾶλλον
ἐλορδαίνετο ἢ ἧ συνέφερεν. ἔγραψα δὲ ἐπίτηδες
τοῦτο· καλὰ γὰρ καὶ ταῦτα τὰ μαθήματά ἐστιν,
ἃ πειρηθέντα ἀπορηθέντα ἐφάνη, καὶ δι᾽ ἅσσα
128 ἠπορήθη.

XLVIII. Ὁπόσοισι δὲ ἐς τὸ ἔσω σκολιαίνονται
οἱ σπόνδυλοι ὑπὸ πτώματος, ἢ καὶ ἐμπεσόντος
τινὸς βαρέος, εἰς μὲν οὐδεὶς τῶν σπονδύλων
μέγα ἐξίσταται κάρτα ὡς ἐπὶ τὸ πολὺ ἐκ τῶν
ἄλλων, ἢν δὲ ἐκστῇ μέγα ἢ εἷς ἢ πλείονες,
θάνατον φέρουσι· ὥσπερ δὴ καὶ πρόσθεν εἴρηται,
κυκλώδης καὶ αὕτη καὶ οὐ γωνιώδης γίνεται ἡ
παραλλαγή. οὖρα μὲν οὖν τοῖσι τοιούτοισι καὶ
ἀπόπατος μᾶλλον ἵσταται ἢ τοῖσιν ἔξω κυφοῖσι,

reduction than these. For straight-line extension on the spine itself, from below, at the so-called sacred bone (sacrum), gets no grip; from above, at the neck and head, it gets a grip indeed, but extension made here looks unseemly, and would also cause harm if carried to excess. I once tried to make extension with the patient on his back, and, after putting an unblown-up bag under the hump, then tried to blow air into the bag with a bronze tube. But my attempt was not a success, for when I got the man well stretched, the bag collapsed, and air could not be forced into it; it also kept slipping round at any attempt to bring the patient's hump and the convexity of the blown-up bag forcibly together; while when I made no great extension of the patient, but got the bag well blown up, the man's back was hollowed as a whole rather than where it should have been. I relate this on purpose; for those things also give good instruction which after trial show themselves failures,[1] and show why they failed.

XLVIII. In cases where the vertebrae are curved inwards from a fall or the impact of some heavy weight, no single vertebra is much displaced from the others as a rule; and if there is great displacement of one or more, it brings death. But, as was said before, this dislocation also is in the form of a curve and not angular. In such cases, then, retention of urine and faeces is more frequent than in outward curvatures;

[1] "On essay show there's no way" might indicate the play on words.

καὶ πόδες καὶ ὅλα τὰ σκέλεα ψύχεται μᾶλλον, καὶ θανατηφόρα ταῦτα μᾶλλον ἐκείνων, καὶ ἢν περιγένωνται δέ, ῥυώδεες τὰ οὖρα μᾶλλον οὗτοι, καὶ τῶν σκελέων ἀκρατέστεροι καὶ ναρκωδέστεροι· ἢν δὲ καὶ ἐν τῷ ἄνω μέρει μᾶλλον τὸ λόρδωμα γένηται, παντὸς τοῦ σώματος ἀκρατέες καὶ νεναρκωμένοι γίνονται. μηχανὴν δὲ οὐκ ἔχω οὐδεμίην ἔγωγε, ὅπως χρὴ τὸν τοιοῦτον ἐς τὸ αὐτὸ καταστῆσαι, εἰ μή τινα ἡ κατὰ[1] τῆς κλίμακος κατάσεισις ὠφελεῖν οἵη τε εἴη, ἢ καὶ ἄλλη τις τοιαύτη ἴησις ἢ κατάτασις, οἵηπερ ὀλίγῳ πρόσθεν εἴρηται. κατανάγκασιν δὲ σὺν τῇ κατατάσει οὐδεμίην ἔχω, ἥτις ἂν γίνοιτο ὥσπερ τῷ κυφώματι τὴν κατανάγκασιν ἡ σανὶς ἐποιεῖτο. πῶς γὰρ ἄν τις ἐκ τοῦ ἔμπροσθεν διὰ τῆς κοιλίης ἀναγκάσαι δύναιτο; οὐ γὰρ οἷόν τε. ἀλλὰ μὴν οὔτε βῆχες οὔτε πτάρμοι οὐδεμίην δύναμιν ἔχουσιν, ὥστε τῇ κατατάσει συντιμωρεῖν· οὐ μὴν οὐδ' ἔνεσις φύσης ἐνιεμένης ἐς τὴν κοιλίην οὐδὲν ἂν δυνηθείη. καὶ μὴν αἱ μεγάλαι σικύαι προσβαλλόμεναι ἀναστάσιος εἵνεκα δῆθεν τῶν ἔσω ῥεπόντων σπονδύλων μεγάλη ἁμαρτὰς γνώμης ἐστίν· ἀπωθέουσι γὰρ μᾶλλον ἢ ἀναστῶσιν· καὶ οὐδ' αὐτὸ τοῦτο γιγνώσκουσι οἱ προσβάλλοντες· ὅσῳ γὰρ ἄν τις μέζω προσβάλλῃ, τοσούτῳ μᾶλλον λορδοῦνται οἱ προσβληθέντες, συναναγκαζομένου ἄνω τοῦ δέρματος. τρόπους τε ἄλλους κατατασίων,[2] ἢ οἷοι πρόσθεν εἴρηνται, ἔχοιμι ἂν εἰπεῖν ἁρμόσαι[3] οὓς ἄν τις δοκέοι[4] τῷ παθήματι μᾶλλον· ἀλλ' οὐ κάρτα πιστεύω αὐτοῖσι· διὰ τοῦτο οὐ γράφω. ἀθρόον δὲ συνιέναι χρὴ περὶ τῶν τοιού-

the feet and lower limbs as a whole more usually lose heat, and these injuries are more generally fatal. Even if they survive, they are more liable to incontinence of urine, and have more weakness and torpor of the legs; while if the incurvation occurs higher up, they have loss of power and complete torpor of the whole body. For my part, I know of no method for reducing such an injury, unless succussion on the ladder may possibly be of use, or other such extension treatment as was described a little above. I have no pressure apparatus combined with extension, which might make pressure reduction, as did the plank in the case of humpback. For how could one use force from the front through the body cavity? It is impossible. Certainly neither coughs nor sneezings have any power to assist extension, nor indeed would inflation of air into the body cavity be able to do anything. Nay more, the application of large cupping instruments, with the idea of drawing out the depressed vertebrae, is a great error of judgment, for they push in rather than draw out; and it is just this which those who apply them fail to see. For the larger the instrument applied, the more the patients hollow their backs, as the skin is drawn together and upwards. I might mention other modes of extension, besides those related above, which would appear more suitable to the lesion; but I have no great faith in them, and therefore do not describe them. As to cases like those summarily mentioned, one

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[1] διὰ. [2] So Erm., Kw. καταστεισίων Littré, Pq. [3] ἁρμόζειν. [4] ἂν δοκέοντας.

των, ὧν[1] ἐν κεφαλαίῳ εἴρηται, ὅτι τὰ μὲν ἐς τὸ λορδὸν ῥέψαντα ὀλέθριά ἐστιν καὶ σινάμωρα, τὰ δὲ ἐς τὸ κυφὸν ἀσινέα θανάτου, καὶ οὖρων σχεσίων καὶ ἀποναρκωσίων τὸ ἐπίπαν· οὐ γὰρ ἐντείνει τοὺς ὀχετοὺς τοὺς κατὰ τὴν κοιλίην, οὐδὲ κωλύει εὐρόους εἶναι ἡ ἐς τὸ ἔξω κύφωσις· ἡ δὲ λόρδωσις ταὐτά τε ἀμφότερα ποιεῖ καὶ ἐς τὰ ἄλλα πολλὰ προσγίνεται. ἐπεί τοι πολὺ πλέονες σκελέων τε καὶ χειρῶν ἀκρατέες γίνονται, καὶ καταναρκοῦνται τὸ σῶμα, καὶ οὖρα ἴσχεται αὐτοῖσιν οἷσιν ἂν μὴ ἐκστῇ μὲν τὸ ὕβωμα μήτε ἔσω μήτε ἔξω, σεισθέωσι δὲ ἰσχυρῶς ἐς τὴν ἰθυωρίην τῆς ῥάχιος· οἷσι δ' ἂν ἐκστῇ τὸ ὕβωμα, ἧσσον τοιαῦτα πάσχουσι.

XLIX. Πολλὰ δὲ καὶ ἄλλα ἐν ἰητρικῇ ἄν τις τοιαῦτα κατίδοι, ὧν τὰ μὲν ἰσχυρὰ ἀσινέα ἐστὶ καὶ καθ' ἑωυτὰ τὴν κρίσιν ὅλην λαμβάνοντα τοῦ νοσήματος, τὰ δὲ ἀσθενέστερα σινάμωρα, καὶ ἀποτόκους νοσημάτων χρονίους ποιέοντα καὶ κοινωνέοντα τῷ ἄλλῳ σώματι ἐπὶ πλέον. ἐπεὶ καὶ πλευρέων κάτηξις τοιοῦτόν τι πέπονθεν· οἷσι μὲν γὰρ ἂν καταγῇ πλευρή, ἢ μίη ἢ πλέονες, ὡς τοῖσι πλείστοισι κατάγνυται, μὴ διασχόντα τὰ ὀστέα ἐς τὸ ἔσω μέρος μηδὲ ψιλωθέντα, ὀλίγοι μὲν ἤδη ἐπυρέτηναν· ἀτὰρ οὐδὲ αἷμα πολλοὶ ἤδη ἔπτυσαν, οὐδὲ ἔμπυοι πολλοὶ γίνονται, οὐδὲ ἔμμοτοι οὐδὲ ἐπισφακελίσιες τῶν ὀστέων· δίαιτά τε φαύλη ἀρκεῖ· ἢν γὰρ μὴ πυρετὸς συνεχὴς ἐπιλαμβάνηται αὐτούς, κενεαγγεῖν κάκιον τοῖσι τοιούτοισιν ἢ μὴ κενεαγγεῖν, καὶ ἐπωδυνέστερον καὶ πυρετωδέστερον καὶ βηχωδέστερον· τὸ γὰρ πλήρωμα

[1] ἃς.

must bear in mind generally that inward deviations cause death or grievous injury, while those in the form of a hump are not as a rule injuries which cause death, retention of urine, or loss of sensation; for external curvature does not stretch the ducts which pass down the body cavity, nor does it hinder free flow, while inward curvature does both these things, and has many other complications. In fact, many more patients get paralysis of legs and arms, loss of sensation in the body, and retention of urine when there is no displacement either inwards or outwards, but a severe concussion in the line of the backbone; while those who have a hump displacement are less liable to such affections.

XLIX. One may observe in medicine many similar examples of violent lesions which are without harm, and contain in themselves the whole crisis of the malady,[1] while slighter injuries are malignant, producing a chronic progeny of diseases and spreading widely into the rest of the body. Fracture of the ribs is such an affection; for in cases of fractured ribs, whether one or more, as the fracture usually occurs, the bones not being separated and driven inwards or laid bare, we rarely find fever; neither does it come to spitting of blood in many cases, nor do they get empyema or wounds requiring plugs, neither is there necrosis of the bones. An ordinary regimen suffices; for if the patients are not attacked by chronic fever, it is worse to use abstinence in such cases than to avoid it; and it involves greater liability to pain, fever, and coughing; for a moderate fullness

[1] *I.e.* it is confined to the injury itself, and steady recovery ensues.

τὸ μέτριον τῆς κοιλίης, διόρθωμα τῶν πλευρέων γίνεται· ἡ δὲ κένωσις κρεμασμὸν μὲν τῇσι πλευρῇσι ποιεῖ· ὁ δὲ κρεμασμός, ὀδύνην. ἔξωθέν τε αὖ φαύλη ἐπίδεσις τοῖσι τοιούτοισιν ἀρκεῖ· κηρωτῇ καὶ σπλήνεσι καὶ ὀθονίοισιν ἡσύχως ἐρείδοντα, ὁμαλὴν τὴν ἐπίδεσιν ποιεῖσθαι καὶ ἐριῶδές τι προσεπιθέντα. κρατύνεται δὲ πλευρὴ ἐν εἴκοσιν ἡμέρῃσιν· ταχεῖαι γὰρ αἱ ἐπιπωρώσιες τῶν τοιούτων ὀστέων.

L. Ἀμφιφλασθείσης μέντοι τῆς σαρκὸς ἀμφὶ τῇσι πλευρῇσιν ἢ ὑπὸ πληγῆς ἢ ὑπὸ πτώματος ἢ ὑπὸ ἀντερείσιος ἢ ἄλλου τινὸς τοιουτοτρόπου, πολλοὶ ἤδη πολὺ αἷμα ἔϊ·τυσαν· οἱ γὰρ ὀχετοὶ οἱ κατὰ τὸ λαπαρὸν τῆς πλευρῆς ἑκάστης παρατεταμένοι, καὶ οἱ τόνοι ἀπὸ τῶν ἐπικαιροτάτων τῶν ἐν τῷ σώματι τὰς ἀφορμὰς ἔχουσιν· πολλοὶ οὖν ἤδη βιηχώδεες καὶ φυματίαι καὶ ἔμπυοι ἐγένοντο καὶ ἔμμοτοι, καὶ ἡ πλευρὴ ἐπεσφακέλισεν αὐτοῖσιν. ἀτὰρ καὶ οἷσιν μηδὲν τοιοῦτον προσεγένετο, ἀμφιφλασθείσης τῆς σαρκὸς ἀμφὶ τῇσι πλευρῇσιν, ὅμως δὲ βραδύτερον ὀδυνώμενοι παύονται οὗτοι ἢ οἷσιν ἂν πλευρὴ καταγῇ, καὶ ὑποστροφὰς μᾶλλον ἴσχει ὀδυνημάτων τὸ χωρίον ἐν τοῖσι τοιούτοισι τρώμασιν ἢ τοῖσι ἑτέροισιν. μάλα μὲν οὖν μετεξέτεροι καταμελέουσιν τῶν τοιούτων σινέων, μᾶλλον ἢ ἦν πλευρὴ καταγῇ αὐτοῖσιν· ἀτὰρ καὶ ἰήσιος σκεθροτέρης οἱ τοιοῦτοι δέονται, εἰ σωφρονοῖεν· τῇ τε γὰρ διαίτῃ συμφέρει συνεστάλθαι, ἀτρεμεῖν τε τῷ σώματι ὡς μάλιστα, ἀφροδισίων τε ἀπέχεσθαι βρωμάτων τε λιπαρῶν καὶ κερχνωδέων, καὶ ἰσχυρῶν πάντων, φλέβα τε κατ' ἀγκῶνα τέμνεσθαι, σιγᾶν τε ὡς μάλιστα,

of the body cavity tends to adjust the ribs, while emptiness leaves them suspended, and the suspension causes pain. Externally, a simple dressing suffices in such cases, with cerate, compresses and bandages, applying them smoothly with gentle pressure, adding also a little wool. A rib consolidates in twenty days, for callus forms rapidly in bones of this kind.

L. When, however, the flesh is contused about the ribs, either by a blow, fall, encounter, or something else of the sort, we find that many have considerable haemoptysis. For the canals extending along the yielding part of each rib, and the cords,[1] have their origin in the most important parts of the body. Thus we find that many get coughs, tubercles, and internal abscesses, and require plugging with lint; also necrosis of the rib is found in these patients. Besides, when nothing of this kind occurs after contusion of the flesh about the ribs, still these patients get rid of the pain more slowly than in cases where a rib is broken; and the part is more liable to recurrences of pain after such injuries than in the other cases. It is true that many neglect such injuries, as compared with a broken rib; yet such need the more careful treatment, if they would be prudent. It is well to reduce the diet, keep the body at rest as far as possible, avoid sexual intercourse, rich foods and those which excite coughing, and all strong nourishment; to open a vein at the elbow, observe silence as much as possible, dress

[1] Nerves.

ἐπιδεῖσθαί τε τὸ χωρίον τὸ φλασθὲν σπλήνεσι μὴ πολυπτύχοισι, συχνοῖσι δὲ καὶ πολὺ πλατυτέροισι πάντη τοῦ φλάσματος, κηρωτῇ τε ὑποχρίειν,[1] ὀθονίοισί τε πλατέσι σὺν ταινίῃσι πλατείῃσι καὶ μαλθακῇσι ἐπιδεῖν, ἐρείδειν τε μετρίως, ὥστε μὴ κάρτα πεπιέχθαι φάναι τὸν ἐπιδεδεμένον, μηδ' αὖ χαλαρόν· ἄρχεσθαι δὲ τὸν ἐπιδέοντα κατὰ τὸ φλάσμα, καὶ ἐρηρεῖσθαι ταύτῃ μάλιστα, τὴν δὲ ἐπίδεσιν ποιεῖσθαι ὡς ἀπὸ δύο ἀρχέων, ἐπιδεῖν τε, ἵνα μὴ περιῤῥεπὲς τὸ δέρμα τὸ περὶ τὰς πλευρὰς ᾖ, ἀλλ' ἰσόῤῥοπον· ἐπιδεῖν δὲ ἢ καθ' ἑκάστην ἡμέρην ἢ παρ' ἑτέρην. ἄμεινον δὲ καὶ κοιλίην μαλθάξαι κούφῳ τινὶ ὅσον κενώσιος εἵνεκεν τοῦ σίτου, καὶ ἐπὶ μὲν δέκα ἡμέρας ἰσχναίνειν, ἔπειτα ἀναθρέψαι τὸ σῶμα καὶ ἀπαλῦναι· τῇ δὲ ἐπιδέσει, ἔστ' ἂν μὲν ἰσχναίνῃς, ἐρηρεισμένῃ μᾶλλον χρῆσθαι, ὁπόταν δὲ ἐς τὸν ἀπαλυσμὸν ἄγῃς, ἐπιχαλαρωτέρῃ. καὶ ἢν μὲν αἷμα ἀποπτύσῃ καταρχάς, τεσσαρακονθήμερον τὴν μελέτην καὶ τὴν ἐπίδεσιν ποιεῖσθαι χρή· ἢν δὲ μὴ πτύσῃ τὸ αἷμα, ἀρκεῖ ἐν εἴκοσιν ἡμέρῃσιν ἡ μελέτη ὡς ἐπὶ τὸ πολύ· τῇ ἰσχύϊ δὲ τοῦ τρώματος τοὺς χρόνους προτεκμαίρεσθαι χρή. ὅσοι δ' ἂν ἀμελήσωσι τῶν τοιούτων ἀμφιφλασμάτων, ἢν καὶ ἄλλο μηδὲν αὐτοῖσι φλαῦρον μέζον γένηται, ὅμως τό γε χωρίον ἀμφιφλασθὲν μυξωδεστέρην τὴν σάρκα ἴσχει ἢ πρόσθεν εἶχεν. ὅπου δέ τι τοιοῦτον ἐγκαταλείπεται, καὶ μὴ εὖ ἐξιποῦται τῇ γε ἀληθέξει, φαυλότερον μέν, ἢν παρ' αὐτὸ τὸ ὀστέον ἐγκαταλειφθῇ τὸ μυξῶδες· οὔτε γὰρ ἔτι ἡ σὰρξ ὁμοίως ἅπτεται τοῦ ὀστέου, τό τε ὀστέον νοση-

the contused part with pads not much folded, but numerous, and extending in every direction a good way beyond the contusion. Anoint first[1] with cerate, and bandage with broad, soft linen bands, making them suitably firm, so that the patient says there is no great pressure, nor on the other hand is it slack. The dresser should begin at the contusion, and make most pressure there; and the bandaging should be done as with a two-headed roller, in such a way that the skin may not get in folds at the ribs, but lie evenly. Change the dressing every day or every other day. It is rather a good thing to relax the bowels with something mild, sufficiently to clear out the food, and give low diet for ten days. Then nourish the body and plump it up. During the attenuation period, use rather tighter bandaging, but more relaxed when you come to the plumping up. If there is haemoptysis to begin with, the treatment and bandaging should be kept up for forty days; if there is no haemoptysis a twenty-day course of treatment usually suffices. The forecast as to time should be made from the gravity of the wound. In cases where such contusions are neglected, even if nothing worse happens to them, still the tissues in the contused part contain more mucus than they did before. When anything of this kind is left behind and not well squeezed out by the curative process, it is worse if the mucoid substance is left in the region of the bone itself; for the flesh no longer adheres so closely to the bone, and the

[1] Cf. *Fract.* XXI for ὑπερχρίω.

[1] ὑπαλείφειν.

ρότερον γίνεται, σφακελισμοί τε χρόνιοι ὀστέου πολλοῖσιν ἤδη ἀπὸ τῶν τοιούτων προφασίων ἐγένοντο. ἀτὰρ καὶ ἦν μὴ παρὰ τὸ ὀστέον, ἀλλ' αὐτὴ ἡ σὰρξ μυξώδης ᾖ, ὅμως ὑποστροφαὶ γίνονται καὶ ὀδύναι ἄλλοτε καὶ ἄλλοτε, ἤν τις τῷ σώματι τύχῃ πονήσας· καὶ διὰ τοῦτο τῇ ἐπιδέσει χρῆσθαι χρή, ἅμα μὲν ἀγαθῇ, ἅμα δὲ ἐπὶ πολὺ προηκούσῃ, ἕως ἂν ξηρανθῇ μὲν καὶ ἀναποθῇ τὸ ἐκχύμωμα τὸ ἐν τῇ φλάσει ἐγγενόμενον, αὐξηθῇ δὲ σαρκὶ ὑγιείῃ τὸ χωρίον, ἄψηται δὲ τοῦ ὀστέου ἡ σάρξ. οἷσι δ' ἂν ἀμεληθεῖσι χρονιωθῇ καὶ ὀδυνῶδες τὸ χωρίον γένηται, καὶ ἡ σὰρξ ὑπόμυξος [ᾖ],[1] τούτοισι καῦσις ἴησις ἀρίστη. καὶ ἦν μὲν αὐτὴ ἡ σὰρξ μυξώδης ᾖ, ἄχρι τοῦ ὀστέου καίειν χρή, μὴ μὴν διαθερμανθῆναι τὸ ὀστέον· ἦν δὲ μεσηγὺ τῶν πλευρῶν ᾖ, ἐπιπολῆς μὲν οὐδὲ οὕτω χρὴ καίειν, φυλάσσεσθαι μέντοι μὴ διακαύσῃς πέρην. ἦν δὲ πρὸς τῷ ὀστέῳ δοκῇ εἶναι τὸ φλάσμα, καὶ ἔτι νεαρὸν ᾖ, καὶ μήπω σφακελίσῃ τὸ ὀστέον, ἦν μὲν κάρτα ὀλίγον ᾖ, οὕτω καίειν χρὴ ὥσπερ εἴρηται· ἦν μέντοι παραμηκὴς ᾖ ὁ μετεωρισμὸς ὁ κατὰ τὸ ὀστέον, πλέονας ἐσχάρας ἐμβάλλειν χρή· περὶ δὲ σφακελισμοῦ πλευρῆς ἅμα τῇ τῶν ἐμμότων ἰητρείῃ εἰρήσεται.

LI. Ἢν δὲ μηροῦ ἄρθρον ἐξ ἰσχίου ἐκπέσῃ, ἐκπίπτει δὲ κατὰ τέσσαρας τρόπους, ἐς μὲν τὸ ἔσω πολὺ πλειστάκις, ἐς δὲ τὸ ἔξω τῶν ἄλλων πλειστάκις· ἐς δὲ τὸ ὄπισθεν καὶ τὸ ἔμπροσθεν ἐκπίπτει μέν, ὀλιγάκις δέ. ὁπόσοισι μὲν οὖν ἂν ἐκβῇ ἐς τὸ ἔσω, μακρότερον τὸ σκέλος φαίνεται, παραβαλλόμενον πρὸς τὸ ἕτερον, διὰ δισσὰς προ-

[1] B Kw. and most MSS. omit

latter becomes more subject to disease. Chronic necroses of bone are found to arise in many cases from causes like these. Besides, even if the mucoid part is not along the bone, but involves the flesh itself, still relapses occur, and periodical pains, whenever one happens to have bodily trouble; and therefore one should use bandaging, both careful and prolonged, for some time, till the exudation formed in the bruise is dried up and consumed, the part filled with healthy flesh, and the flesh firmly attached to the bone. In neglected cases which have become chronic, when the part is painful and the flesh rather mucous, the best treatment is cauterising. If the flesh itself is mucous, one should cauterise down to the bone, but avoid greatly heating the latter. If it is intercostal, the cauterisation should, even so, not be superficial; yet one should take care not to burn right through. If the contusion appears to have reached the bone, and is still fresh, and the bone not yet necrosed, if it be quite small, one should cauterise as directed; but if there is an elongated tumefaction over the bone, one should make several eschars. Necrosis of a rib will be considered along with the treatment of patients with discharging abscesses.

LI. When the head of the thigh-bone is dislocated from the hip, it is dislocated in four ways, far most frequently inwards; and of the others the most frequent is outwards. Dislocation backwards and forwards occurs, but is rare. In cases where it is displaced inwards, the leg appears longer when placed beside the other, naturally so, for a double

φάσιας εἰκότως· ἐπί τε γὰρ τὸ ἀπὸ τοῦ ἰσχίου πεφυκὸς ὀστέον, τὸ ἄνω φερόμενον πρὸς τὸν κτένα, ἐπὶ τοῦτο ἡ ἐπίβασις τῆς κεφαλῆς τοῦ μηροῦ γίνεται, καὶ ὁ αὐχὴν τοῦ ἄρθρου ἐπὶ τῆς κοτύλης ὀχεῖται· ἔξωθέν τε αὖ γλουτὸς κοῖλος φαίνεται, ἅτε ἔσω ῥεψάσης τῆς κεφαλῆς τοῦ μηροῦ, τό τε αὖ κατὰ τὸ γόνυ τοῦ μηροῦ ἄκρον ἀναγκάζεται ἔξω ῥέπειν, καὶ ἡ κνήμη καὶ ὁ ποὺς ὡσαύτως. ἅτε οὖν ἔξω ῥέποντος τοῦ ποδός, οἱ ἰητροὶ δι' ἀπειρίην τὸν ὑγιέα πόδα πρὸς τοῦτον προσίσχουσιν, ἀλλ' οὐ τοῦτον πρὸς τὸν ὑγιέα· διὰ τοῦτο πολὺ μακρότερον φαίνεται τὸ σιναρὸν τοῦ ὑγιέος· πολλαχῇ δὲ καὶ ἄλλῃ τὰ τοιαῦτα παρασύνεσιν ἔχει. οὐ μὴν οὐδὲ συγκάμπτειν δύνανται κατὰ τὸν βουβῶνα ὁμοίως τῷ ὑγιεῖ· ἀτὰρ καὶ ψαυομένη ἡ κεφαλὴ τοῦ μηροῦ κατὰ τὸν περίναιον ὑπερογκέουσα εὔδηλός ἐστιν. τὰ μὲν οὖν σημεῖα ταῦτά ἐστιν, οἷσιν ἂν ἔσω ἐκπεπτώκῃ ὁ μηρός.

LII. Οἷσι μὲν οὖν ἂν ἐκπεσὼν μὴ ἐμπέσῃ, ἀλλὰ καταποριθῇ καὶ[1] ἀμεληθῇ, ἥ τε ὁδοιπορίη περιφοράδην τοῦ σκέλεος ὥσπερ τοῖσι βουσὶ γίνεται, καὶ ἡ ὄχνησις πλείστη αὐτοῖσιν ἐπὶ τοῦ ὑγιέος σκέλεός ἐστιν. καὶ ἀναγκάζονται κατὰ τὸν κενεῶνα καὶ κατὰ τὸ ἄρθρον τὸ ἐκπεπτωκὸς κοῖλοι καὶ σκολιοὶ εἶναι· κατὰ δὲ τὸ ὑγιὲς ἐς τὸ ἔξω ὁ γλουτὸς ἀναγκάζεται περιφερὴς εἶναι· εἰ γάρ τις ἔξω τῷ ποδὶ τοῦ ὑγιέος σκέλεος βαίνοι, ἀπωθέοι ἂν τὸ σῶμα τὸ ἄλλο ἐς τὸ σιναρὸν σκέλος τὴν ὄχνησιν ποιεῖσθαι· τὸ δὲ σιναρὸν οὐκ

[1] καὶ = ἢ. Cf. Thucyd. II. 35.

reason; for the dislocation of the head of the femur takes place on to the bone arising from the ischium and passing up to the pubes, and its neck is supported against the cotyloid cavity.[1] Besides, the buttock looks hollow on the outer side, because the head of the femur is turned inwards; again, the end of the femur at the knee is compelled to turn outwards, and the leg and the foot likewise. Thus, as the foot inclines outwards, practitioners through inexperience bring the foot of the sound limb to it, instead of bringing it to the sound one. This makes the damaged limb appear much longer than the sound one; and this sort of thing causes misapprehension in a variety of other ways. The patients, moreover, cannot bend at the groin so well as one with a sound limb; and for the rest, on palpating the head of the femur, it is manifest as an abnormal prominence at the perineum.[2] These then are the signs in cases of internal dislocation of the thigh.

LII. In cases where the dislocation is not reduced, but is given up or neglected, progression is accomplished, as in oxen, by bringing the leg round; and they throw most of their weight on the sound leg. They are also of necessity curved in and distorted in the region of the loin and the dislocated joint, while on the sound side the buttock is necessarily rounded outwards. For if one were to walk with the foot of the sound leg turned out, he would thrust the body over, and put its weight on the injured leg;

[1] *I.e.* lower rim of the acetabulum; so Littré, Pq. Adams suggests the perforation below the pubic bone (thyroid). As already remarked the frequency and nature of this dislocation are hard to understand.

[2] Evidently understood in a wide sense, to include inner part of groin.

ἂν δύναιτο ὀχεῖν· πῶς γάρ; ἀναγκάζεται οὖν οὕτω κατὰ τοῦ ὑγιέος σκέλεος τῷ ποδὶ ἔσω βαίνειν, ἀλλὰ μὴ ἔξω· οὕτω γὰρ ὀχεῖ μάλιστα τὸ σκέλος τὸ ὑγιὲς καὶ τὸ ἑωυτοῦ μέρος τοῦ σώματος καὶ τὸ τοῦ σιναροῦ σκέλεος μέρος. κοιλαινόμενοι δὲ κατὰ τὸν κενεῶνα καὶ κατὰ τὰ ἄρθρα, σμικροὶ φαίνονται καὶ[1] ἀντερείδεσθαι ἀναγκάζονται πλάγιοι κατὰ τὸ ὑγιὲς σκέλος· δέονται γὰρ ἀντικοντώσιος ταύτῃ· ἐπὶ τοῦτο γὰρ οἱ γλουτοὶ ῥέπουσι, καὶ τὸ ἄχθος τοῦ σώματος ὀχεῖται[2] ἐπὶ τοῦτο. ἀναγκάζονται δὲ καὶ ἐπικύπτειν· τὴν γὰρ χεῖρα τὴν κατὰ τὸ σκέλος τὸ σιναρὸν ἀναγκάζονται κατὰ πλάγιον τὸν μηρὸν ἐρείδειν· οὐ γὰρ δύναται τὸ σιναρὸν σκέλος ὀχεῖν τὸ σῶμα ἐν τῇ μεταλλαγῇ τῶν σκελέων, ἢν μὴ κατέχηται πρὸς τὴν γῆν πιεζόμενον. ἐν τοιούτοισι[3] οὖν τοῖσι σχήμασιν ἀναγκάζονται ἐσχηματίσθαι, οἷσιν ἂν ἔσω ἐκβὰν τὸ ἄρθρον μὴ ἐμπέσῃ, οὐ προβουλεύσαντος τοῦ ἀνθρώπου ὅπως ἂν ῥῇστα ἐσχηματισμένον[4] ᾖ, ἀλλ' αὐτὴ ἡ συμφορὴ διδάσκει ἐκ τῶν παρεόντων τὰ ῥῇστα αἱρεῖσθαι. ἐπεὶ καὶ ὁπόσοι[5] ἕλκος ἔχοντες ἐν ποδὶ ἢ κνήμῃ οὐ κάρτα δύνανται ἐπιβαίνειν τῷ σκέλει, πάντες, καὶ οἱ νήπιοι, οὕτως ὁδοιποροῦσιν· ἔξω γὰρ βαίνουσι τῷ σιναρῷ σκέλει· καὶ δισσὰ κερδαίνουσι, δισσῶν γὰρ δέονται· τό τε γὰρ σῶμα οὐκ ὀχεῖται ὁμοίως ἐπὶ τοῦ ἔξω ἀποβαινομένου ὥσπερ ἐπὶ τοῦ ἔσω· οὐδὲ γὰρ κατ' ἰθυωρίην αὐτῷ γίνεται τὸ ἄχθος, ἀλλὰ πολὺ μᾶλλον ἐπὶ τοῦ ὑποβαινομένου· κατ' ἰθυωρίην γὰρ αὐτῷ γίνεται τὸ ἄχθος, ἔν τε αὐτῇ τῇ ὁδοιπορίῃ καὶ τῇ μεταλλαγῇ τῶν σκελέων.

and the injured limb could not carry it. How should it? He is thus obliged to walk with the foot of the sound leg turned in and not out; for in this way the sound limb is best able to carry both its own share of the body and that of the injured one. But, owing to the inward curvature at the loin and at the joints, they appear short, and patients have to support themselves laterally on the side of the sound leg with a crutch. They want a prop there, because the buttocks incline that way, and the weight of the body lies in that direction. They are also obliged to stoop; for they have to press the hand on the side of the injured leg laterally against the thigh, since the injured limb cannot support the body during the change of legs, unless it is kept down on the ground by pressure. Such then are the attitudes which patients are obliged to assume in unreduced internal dislocation of the hip—not as a result of previous deliberation by the patient as to what will be the easiest attitude; but the lesion itself teaches him to choose the easiest available. So too those who, when they have a wound on the foot or leg, can hardly use the limbs—all of them, even young children, walk in this way. They turn the injured leg out in walking, and get a double boon to match a double need; for the body is not borne equally on the limb brought outwards and on that brought in, since the weight is not perpendicular to it, but comes much more on the limb that is brought under; the weight is perpendicular to the latter both in actual walking and in the

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[1] ξύλῳ τῳ K. τῷ ξύλῳ Littré. Pq. omits.
[2] ἐγκεῖται.
[3] τούτοισιν.
[4] ἐσχηματισμένος.
[5] ὅσοι.

ἐν τούτῳ τῷ σχήματι τάχιστα ἂν δύναιτο ὑποτιθέναι τὸ ὑγιὲς σκέλος, ἢν[1] τῷ μὲν σιναρῷ ἐξωτέρω βαίνοι, τῷ δὲ ὑγιεῖ ἐσωτέρω. περὶ οὗ οὖν ὁ λόγος, ἀγαθὸν εὑρίσκεσθαι αὐτὸ ἑωυτῷ τὸ σῶμα ἐς τὰ ῥήϊστα τῶν σχημάτων. ὅσοισι μὲν οὖν μήπω τετελειωμένοισιν ἐς αὔξησιν ἐκπεσὸν μὴ ἐμπέσῃ, γυιοῦται ὁ μηρὸς καὶ ἡ κνήμη καὶ ὁ πούς· οὔτε γὰρ τὰ ὀστέα ἐς τὸ μῆκος ὁμοίως αὔξεται, ἀλλὰ βραχύτερα γίνεται, μάλιστα δὲ τὸ τοῦ μηροῦ, ἄσαρκόν τε ἅπαν τὸ σκέλος καὶ ἄμυον καὶ ἐκτεθηλυσμένον καὶ λεπτότερον γίνεται, ἅμα μὲν διὰ τὴν στέρησιν τῆς χώρης τοῦ ἄρθρου, ἅμα δὲ ὅτι ἀδύνατον χρῆσθαί ἐστιν, ὅτι οὐ κατὰ φύσιν κεῖται· χρῆσις γὰρ μετεξετέρη ῥύεται τῆς ἄγαν ἐκθηλύνσιος· ῥύεται δέ τι καὶ τῆς ἐπὶ μῆκος ἀναυξήσιος. κακοῦται μὲν οὖν μάλιστα οἷσιν ἂν ἐν γαστρὶ ἐοῦσιν ἐξαρθρήσῃ τοῦτο τὸ ἄρθρον, δεύτερον δὲ οἷσιν ἂν ὡς νηπιωτάτοισιν ἐοῦσιν, ἥκιστα δὲ τοῖσι τετελειωμένοισιν. τοῖσι μὲν οὖν τετελειωμένοισιν εἴρηται οἵη τις ἡ ὁδοιπορίη γίνεται· οἷσι δ' ἂν νηπίοισιν ἐοῦσιν ἡ συμφορὴ αὕτη γένηται, οἱ μὲν πλεῖστοι καταβλακεύουσι[2] τὴν διόρθωσιν τοῦ σώματος, ἀλλὰ [κακῶς][3] εἰλέονται ἐπὶ τὸ ὑγιὲς σκέλος, τῇ χειρὶ πρὸς τὴν γῆν ἀπερειδόμενοι τῇ κατὰ τὸ ὑγιὲς σκέλος. καταβλακεύουσι δὲ ἔνιοι τὴν ἐς ὀρθὸν ὁδοιπορίην καὶ οἷσιν ἂν τετελειωμένοισι αὕτη ἡ συμφορὴ γένηται. ὁπόσοι δ' ἂν νήπιοι ἐόντες ταύτῃ τῇ συμφορῇ χρησάμενοι ὀρθῶς παιδαγωγηθέωσι,[4] τῷ μὲν ὑγιεῖ σκέλει χρέονται[5] ἐς ὀρθόν, ὑπὸ δὲ τὴν μασχάλην τὴν κατὰ τὸ

[1] εἰ. [2] καταμβλακεύουσι *bis*.

change of legs. It is in this attitude, with the injured leg rather outwards and the sound one rather inwards. that one can most rapidly put the sound limb under. As regards our subject, then, it is good that the body finds out for itself the easiest posture. When it is in persons who have not yet completed their growth that the hip remains unreduced after dislocation, the thigh is maimed, and the leg and foot also. The bones do not grow to their normal length, but are shorter, especially that of the thigh; while the whole leg is deficient in flesh and musele, and becomes flaccid and attenuated. This is due at once to the head of the bone being out of place and to the impossibility of using it in its abnormal position; for a certain amount of exercise saves it from excessive flaccidity, and in some degree prevents the defective growth in length. Thus the greatest damage is done to those in whom this joint is dislocated *in utero*; next, to those who are very young; and least to adults. In the case of adults, their mode of walking has been described; but when this accident occurs in those who are very young, for the most part they lack energy to keep the body up, but they crawl about [miserably] on the sound leg, supporting themselves with the hand on the sound side on the ground. Some even among those to whom this accident happens when adult lack the energy to walk standing up; but when persons are afflicted by this accident in early childhood and are properly trained, they use the sound leg to stand up

[3] Kw. omits; also B and the best MSS.
[4] Kw.'s correction for παιδαγωγηθῶσι codd.
[5] χρέωνται Kw.

ὑγιὲς σκέλος σκίπωνα περιφέρουσι, μετεξέτεροι δὲ καὶ ὑπ' ἀμφοτέρας τὰς χεῖρας· τὸ δὲ σιναρὸν σκέλος μετέωρον ἔχουσι, καὶ τοσούτῳ ῥηΐους εἰσίν, ὅσῳ ἂν αὐτοῖσιν ἔλασσον τὸ σκέλος τὸ σιναρὸν ᾖ· τὸ δὲ ὑγιὲς ἰσχύει αὐτοῖσιν οὐδὲν ἧσσον ἢ εἰ καὶ ἀμφότερα ὑγιέα ἦν. θηλύνονται δὲ πᾶσι τοῖσι τοιούτοισι αἱ σάρκες τοῦ σκέλεος, μᾶλλον δέ τι θηλύνονται αἱ ἐκ τοῦ ἔξω μέρεος ἢ αἱ ἐκ τοῦ ἔσω ὡς ἐπὶ πολύ.

LIII. Μυθολογοῦσι[1] δέ τινες, ὅτι αἱ Ἀμαζωνίδες τὸ ἄρσεν γένος τὸ ἑωυτῶν αὐτίκα νήπιον ἐὸν ἐξαρθρέουσιν, αἱ μὲν κατὰ [τὰ][2] γούνατα, αἱ δὲ κατὰ τὰ ἰσχία, ὡς δῆθεν χωλὰ γίνοιτο, καὶ μὴ ἐπιβουλεύοι τὸ ἄρσεν γένος τῷ θήλει· χειρώναξιν ἄρα τούτοισι χρέονται,[3] ὁπόσα ἢ σκυτείης ἔργα ἢ χαλκείης, ἢ ἄλλο τι ἑδραῖον ἔργον. εἰ μὲν οὖν ἀληθέα ταῦτά ἐστιν, ἐγὼ μὲν οὐκ οἶδα· ὅτι δὲ γίνοιτο ἂν τοιαῦτα οἶδα, εἴ τις ἐξαρθρέοι αὐτίκα νήπια ἐόντα. κατὰ μὲν οὖν τὰ ἰσχία μέζον τὸ διάφορόν ἐστιν ἐς τὸ ἔσω ἢ ἐς τὸ ἔξω ἐξαρθρῆσαι· κατὰ δὲ τὰ γούνατα διαφέρει μέν τι, ἔλασσον δέ τι διαφέρει. τρόπος δὲ ἑκατέρου τοῦ χωλώματος ἴδιός ἐστιν· κυλλοῦνται[4] μὲν γὰρ μᾶλλον οἷσιν ἂν ἐς τὸ ἔξω ἐξαρθρήσῃ· ὀρθοὶ δὲ ἧσσον ἵστανται οἷσιν ἂν ἐς τὸ ἔσω ἐξαρθρήσῃ. ὡσαύτως δὲ καὶ ἢν παρὰ τὸ σφυρὸν ἐξαρθρήσῃ, ἢν μὲν ἐς τὸ ἔξω μέρος, κυλλοὶ μὲν γίνονται, ἑστάναι δὲ δύνανται· ἢν δὲ ἐς τὸ ἔσω μέρος, βλαισοὶ μὲν γίνονται, ἧσσον δὲ ἑστάναι δύνανται. ἤ γε μὴν συναύξησις τῶν ὀστέων τοιήδε γίνεται· οἷσι μὲν ἂν τὸ κατὰ τὸ

[1] Μυθολογέουσι Kw.
[2] Littré's insertion, but Galen also has it.
[3] χρέωνται Kw.
[4] Erm. Pq. for γνιοῦνται vulg.

on, but carry a crutch under the armpit on that side, and some of them under both arms. As for the injured leg, they keep it off the ground, and do so the more easily, because in them the injured leg is smaller; but their sound leg is as strong as if both were sound. In all such cases the fleshy parts of the leg are flaccid; and, as a general rule, they are more flaccid on the outer than on the inner side.

LIII. Some tell a tale how the Amazons dislocate the joints of their male offspring in early infancy (some at the knees and some at the hips), that they may, so it is said, become lame, and the males be incapable of plotting against the females. They are supposed to use them as artisans in all kinds of leather or copper work, or some other sedentary occupation. For my part, I am ignorant whether this is true; but I know that such would be the result of dislocating the joints of young infants. At the hips there is a marked difference between inward and outward dislocation; but at the knees, though there is a certain difference, it is less. In each case there is a special kind of lameness. Those in whom the dislocation [at the knee] is outwards are more bandy-legged, while those in whom it is inwards [1] are less able to stand erect. Similarly, when the dislocation is at the ankle, if it is outwards, they become club-footed,[2] but are able to stand; while if it is inwards, they become splay-footed, and are less able to stand. As regards growth of the bones, the following is what happens: when the bone of the

[1] *I.e.* the knock-kneed.

[2] *I.e.* leg outwards and foot inwards, and vice versa. The knock-kneed and splay-footed are worse off than the bandy-legged and club-footed.

σφυρὸν ὀστέον τὸ τῆς κνήμης[1] ἐκστῇ, τούτοισι μὲν τὰ τοῦ ποδὸς ὀστέα ἥκιστα συναύξεται, ταῦτα γὰρ ἐγγυτάτω τοῦ τρώματός ἐστιν, τὰ δὲ τῆς κνήμης ὀστέα αὔξεται μέν, οὐ πολὺ δὲ ἐνδεεστέρως, αἱ μέντοι σάρκες μινύθουσι. οἷσι δ' ἂν κατὰ μὲν τὸ σφυρὸν μένῃ τὸ ἄρθρον κατὰ φύσιν, κατὰ δὲ τὸ γόνυ ἐξεστήκῃ, τούτοισι τὸ τῆς κνήμης ὀστέον οὐκ ἐθέλει συναυξάνεσθαι ὁμοίως, ἀλλὰ βραχύτερον γίνεται, τοῦτο γὰρ ἐγγυτάτω τοῦ τρώματός ἐστιν, τοῦ μέντοι ποδὸς τὰ ὀστέα μινύθει μέν, ἀτὰρ οὐχ ὁμοίως, ὥσπερ ὀλίγον τι πρόσθεν εἴρηται, ὅτι τὸ ἄρθρον τὸ παρὰ τὸν πόδα σῶόν ἐστι. εἰ δέ οἱ χρῆσθαι ἠδύναντο, ὥσπερ καὶ τῷ κυλλῷ, ἔτι ἂν ἧσσον ἐμινύθει τὰ τοῦ ποδὸς ὀστέα τούτοισιν. οἷσι δ' ἂν κατὰ τὸ ἰσχίον ἡ ἐξάρθρησις γένηται, τούτοισι τοῦ μηροῦ τὸ ὀστέον οὐκ ἐθέλει συναυξάνεσθαι ὁμοίως, τοῦτο γὰρ ἐγγυτάτω τοῦ τρώματός ἐστιν, ἀλλὰ βραχύτερον τοῦ ὑγιέος γίνεται· τὰ μέντοι τῆς κνήμης ὀστέα οὐχ ὁμοίως τούτοισιν ἀναυξέα γίνεται, οὐδὲ τὰ τοῦ ποδός, διὰ τοῦτο δέ, ὅτι τὸ τοῦ μηροῦ ἄρθρον τὸ παρὰ τὴν κνήμην ἐν τῇ ἑωυτοῦ φύσει μένει, καὶ τὸ τῆς κνήμης τὸ παρὰ τὸν πόδα· σάρκες μέντοι μινύθουσι παντὸς τοῦ σκέλεος τούτοισιν. εἰ μέντοι χρῆσθαι τῷ σκέλει ἠδύναντο, ἔτι ἂν μᾶλλον τὰ ὀστέα συνηύξανετο, ὡς καὶ πρόσθεν εἴρηται, πλὴν τοῦ μηροῦ, κἂν ἧσσον ἄσαρκα εἴη, ἀσαρκότερα δὲ πολλῷ ἢ εἰ ὑγιέα ἦν. σημεῖον δὲ ὅτι ταῦτα τοιαῦτά ἐστιν· ὁπόσοι γάρ, τοῦ βραχίονος ἐκπεσόντος, γαλιάγκωνες ἐγέιοντο ἐκ γενεῆς, ἢ καὶ ἐν αὐξήσει πρὶν[2] τελειωθῆναι, οὗτοι τὸ μὲν ὀστέον τοῦ βραχίονος βραχὺ ἴσχουσι, τὸν

leg at the ankle is dislocated, the bones of the foot show least growth, for they are nearest the injury, but growth of the leg-bones is not very deficient; the tissues however are atrophied. In cases where the ankle-joint keeps its natural position while there is dislocation at the knee, the bone of the leg will not grow like the other, but is shortened; for this is nearest the injury. The bones of the foot are atrophied, but not to the same extent as was noticed a little above, because the joint at the foot is intact; and should they be able to use the part, as is the case even in club-foot, the bones of the foot in their case would be still less atrophied. When the dislocation occurs at the hip, the thigh-bone will not grow like the other, for it is nearest the injury; but it gets shorter than the sound one; the bones of the leg, however, do not stop growing in the same way, nor do those of the foot, because the end of the thigh-bone at the knee keeps its natural place, also that of the leg at the foot; but the tissues of the whole leg are atrophied in these cases. But if they were able to use the leg, the bones would correspond in growth to a still greater extent, the thigh excepted, as was said before; and they would be less deficient in flesh, though much more so than if the limb were sound. Here is a proof that these things are so: those who become weasel-armed owing to dislocation of the shoulder either congenitally or during adolescence, and before they become adults, have the bone of the upper arm short, but the forearm and

[1] This is curious phrasing. Cf. remarks on the astragalus in Introduction and notes on ankle dislocation, *Mochl.* XXX.

[2] καὶ πρὶν Kw.

δὲ πῆχυν καὶ ἄκρην τὴν χεῖρα ὀλίγῳ ἐνδεεστέρην τοῦ ὑγιέος, διὰ ταύτας τὰς προφάσιας τὰς εἰρημένας, ὅτι ὁ μὲν βραχίων ἐγγυτάτω [τοῦ ἄρθρου] τοῦ τρώματός ἐστιν, ὥστε διὰ τοῦτο βραχύτερος ἐγένετο· ὁ δὲ αὖ πῆχυς διὰ τοῦτο οὐχ ὁμοίως ἐνακούει τῆς συμφορῆς, ὅτι τὸ τοῦ βραχίονος
60 ἄρθρον τὸ πρὸς τοῦ πήχεος ἐν τῇ ἀρχαίῃ φύσει μένει, ἥ τε αὖ χεὶρ ἄκρη ἔτι τηλοτέρω ἄπεστιν ἢ ὁ πῆχυς ἀπὸ τῆς συμφορῆς. διὰ ταύτας οὖν τὰς εἰρημένας προφάσιας, τῶν ὀστέων τά τε μὴ συναυξανόμενα οὐ συναυξάνεται, τά τε συναυξανόμενα συναυξάνεται. ἐς δὲ τὸ εὔσαρκον τῇ χειρὶ καὶ τῷ βραχίονι ἡ ταλαιπωρίη τῆς χειρὸς μέγα προσωφελεῖ· ὅσα γὰρ χειρῶν ἔργα ἐστί, τὰ πλεῖστα προθυμέονται οἱ γαλιάγκωνες ἐργάζεσθαι τῇ χειρὶ ταύτῃ, ὅσα περ καὶ τῇ ἑτέρῃ δύνανται
70 οὐδὲν ἐνδεεστέρως τῆς ἀσινέος· οὐ γὰρ δεῖ ὀχεῖσθαι τὸ σῶμα ἐπὶ τῶν χειρῶν ὡς ἐπὶ τῶν σκελέων, ἀλλὰ κοῦφα αὐτοῖσι τὰ ἔργα ἐστίν. διὰ δὲ τὴν χρῆσιν οὐ μινύθουσιν αἱ σάρκες αἱ κατὰ τὴν χεῖρα καὶ κατὰ τὸν πῆχυν τοῖσι γαλιάγκωσιν· ἀλλὰ καὶ ὁ βραχίων τι προσωφελεῖται ἐς εὐσαρκίην διὰ ταῦτα.[1] ὅταν δὲ ἰσχίον ἐκπαλὲς γένηται ἐς τὸ ἔσω μέρος ἐκ γενεῆς, ἢ καὶ ἔτι νηπίῳ ἐόντι, μινύθουσιν αἱ σάρκες διὰ τοῦτο μᾶλλον ἢ τῆς χειρός, ὅτι οὐ δύνανται χρῆσθαι τῷ σκέλει.
80 μαρτύριον ἓν[2] δέ τι ἐνέσται καὶ ἐν τοῖσιν ὀλίγον
81 ὕστερον εἰρησομένοισι, ὅτι ταῦτα τοιαῦτά ἐστιν.

LIV. Ὁπόσοισι[3] δ' ἂν ἐς τὸ ἔξω ἡ τοῦ μηροῦ κεφαλὴ ἐκβῇ, τούτοισι βραχύτερον μὲν τὸ σκέλος

[1] ταύτην. [2] Kw. omits. [3] Οἷσι.

hand little inferior to those on the sound side, for the reasons that have been given, viz., that the upper arm is nearest the injury, and on that account is shorter.[1] The forearm, on the contrary, is not equally influenced by the lesion, because the end of the humerus which articulates with the ulna retains its old position. And the hand, again, is still further away from the lesion than is the forearm. For the aforesaid reasons, then, the bones which do not grow normally are defective in growth, and those which do grow maintain their growth. Manual exercise contributes greatly to the good flesh-development in hand and arm. In fact, taking all sorts of handiwork, the weasel-armed are ready to do with this one most of what they can do with the other arm, and do the work no less efficiently than with the sound limb; for it is not necessary for the body weight to be supported on the arms as on the legs, and the work done by them [*i.e.* the weasel-armed][2] is light. Owing to use, the flesh of the hand and forearm is not atrophied in the weasel-armed; and even the upper arm gains some further development from this. But when the hip is dislocated inwards, either congenitally or in one still a child, there is more atrophy of flesh than in the arm, just because they cannot use the leg. A special piece of evidence that this is the case will be found in what is about to be said a little below.

LIV. In cases where the head of the thigh-bone is dislocated outwards, the leg is seen to be shorter,

[1] Kw. puts τοῦ ἄρθρου in brackets. It appears a needless gloss.

[2] Littré, Adams, Erm. read αὐτῆσι and refer it to the hands. But hands and arms may do hard work.

φαίνεται παρατεινόμενον παρὰ τὸ ἕτερον, εἰκότως· οὐ γὰρ ἐπ' ὀστέον ἡ ἐπίβασις τῆς κεφαλῆς τοῦ μηροῦ ἐστίν, ὡς ὅτε ἔσω ἐκπέπτωκεν, ἀλλὰ παρ' ὀστέον παρεγκεκλιμένην τὴν φύσιν ἔχον, ἐν σαρκὶ δὲ στηρίζεται ὑγρῇ καὶ ὑπεικούσῃ· διὰ τοῦτο μὲν βραχύτερον φαίνεται. ἔσωθεν δὲ ὁ μηρὸς παρὰ τὴν πλιχάδα καλεομένην κοιλότερος καὶ ἀσαρκότερος φαίνεται·[1] ἔξωθεν δὲ ὁ γλουτὸς κυρτότερος, ἅτε ἐς τὸ ἔξω τῆς κεφαλῆς τοῦ μηροῦ ὠλισθηκυίης· ἀτὰρ καὶ ἀνωτέρω φαίνεται ὁ γλουτὸς ἅτε ὑπειξάσης τῆς σαρκὸς τῆς ἐνταῦθα τῇ τοῦ μηροῦ κεφαλῇ· τὸ δὲ παρὰ τὸ γόνυ τοῦ μηροῦ ἄκρον ἔσω ῥέπον φαίνεται, καὶ ἡ κνήμη καὶ ὁ πούς· ἀτὰρ οὐδὲ συγκάμπτειν ὥσπερ τὸ ὑγιὲς σκέλος δύνανται. τὰ μὲν οὖν σημεῖα ταῦτα τοῦ ἔξω ἐκπεπτωκότος μηροῦ εἰσίν.

LV. Οἷσι μὲν οὖν ἂν τετελειωμένοισιν ἤδη ἐκπεσὸν τὸ ἄρθρον μὴ ἐμπέσῃ, τούτοισι βραχύτερον μὲν φαίνεται τὸ σύμπαν σκέλος, ἐν δὲ τῇ ὁδοιπορίῃ τῇ μὲν πτέρνῃ οὐ δύνανται καθικνεῖσθαι [ἐπὶ][2] τῆς γῆς, τῷ δὲ στήθει τοῦ ποδὸς βαίνουσι ἐπὶ τὴν γῆν· ὀλίγον δὲ ἐς τὸ ἔσω μέρος ῥέπουσι τοῖσι δακτύλοισι ἄκροισιν. ὀχεῖν δὲ δύναται τὸ σῶμα τὸ σιναρὸν σκέλος τούτοισι πολλῷ μᾶλλον ἢ οἷσιν ἂν ἐς τὸ ἔσω μέρος ἐκπεπτώκῃ, ἅμα μὲν ὅτι ἡ κεφαλὴ τοῦ μηροῦ καὶ ὁ αὐχὴν τοῦ ἄρθρου πλίγιος φύσει πεφυκὼς ὑπὸ συχνῷ μέρει τοῦ ἰσχίου τὴν ὑπόστασιν πεποίηται, ἅμα δὲ ὅτι ἄκρος ὁ ποὺς οὐκ ἐς τὸ ἔξω μέρος ἀναγκάζεται ἐκκεκλίσθαι, ἀλλ' ἐγγὺς τῆς ἰθυωρίης τῆς κατὰ τὸ σῶμα καὶ τείνει καὶ ἐσωτέρω. ὅταν οὖν τρίβον μὲν λάβῃ τὸ ἄρθρον ἐν τῇ σαρκὶ ἐς ἣν

when put beside the other. Naturally so, for it is no longer on bone that the head of the thigh-bone has its support, as when it was displaced inwards; but it lies along the natural slope of the hip-bone, and is sustained by soft and yielding flesh; wherefore it is seen to be shorter. The thigh on the inside at what is called the fork appears more hollow and less fleshy, while the buttock is rather more rounded on the outside, since the head of the bone is displaced outwards; besides this, the buttock is seen to be higher, since the flesh at that part gives way before the head of the thigh-bone. But the end of the bone at the knee is seen to turn inwards, and with it the leg and foot; for the rest, they cannot bend it in the same way as the sound leg. These then are the signs of dislocation of the thigh outwards.

LV. In cases of adults, when the joint is not reduced after dislocation, the whole leg is seen to be shorter; and in walking they cannot reach the ground with the heel, but go on the ball of the foot, and turn the toes a little inwards. But the injured leg can bear the weight of the body much better in these cases than where there has been dislocation inwards, partly because the head and neck of the thigh-bone, being naturally oblique, have got a lodging under a large part of the hip, and partly because the foot is not obliged to incline outwards, but is near the vertical line of the body, and even tends rather inwards. As soon, then, as the articular part forms a friction-cavity in the flesh where it is

[1] γίνεται. [2] Omit B Kw.

ἐξεκλίθη, ἡ δὲ σὰρξ γλισχρανθῇ, ἀνώδυνον τῷ χρόνῳ γίνεται· ὅταν δὲ ἀνώδυνον γένηται, δύνανται μὲν ὁδοιπορεῖν ἄνευ ξύλου, ἢν ἄλλως βούλωνται· δύνανται δὲ ὀχεῖν τὸ σῶμα ἐπὶ τὸ σιναρὸν σκέλος. διὰ οὖν τὴν χρῆσιν ἧσσον τοῖσι τοιούτοισι ἐκθηλύνονται αἱ σάρκες ἢ οἷσιν ὀλίγον πρόσθεν εἴρηται· ἐκθηλύνονται δὲ ἢ πλεῖον ἢ ἔλασσον· μᾶλλον δέ τι ἐκθηλύνονται κατὰ τὸ ἔσω μέρος ἢ κατὰ τὸ ἔξω ὡς ἐπὶ τὸ πολύ. τὸ μέντοι ὑπόδημα μετεξέτεροι τούτων ὑποδεῖσθαι οὐ δύνανται, διὰ τὴν ἀκαμπίην τοῦ σκέλεος, οἱ δέ τινες καὶ δύνανται. οἷσιν δ' ἂν ἐν γαστρὶ ἐοῦσιν ἐξαρθρήσῃ τοῦτο τὸ ἄρθρον, ἢ ἔτι ἐν αὐξήσει ἐοῦσι βίῃ ἐκπεσὸν μὴ ἐμπέσῃ, ἢ καὶ ὑπὸ νούσου ἐξαρθρήσῃ τοῦτο τὸ ἄρθρον καὶ ἐκπαλήσῃ—πολλὰ γὰρ τοιαῦτα γίνεται—καὶ ἐνίων μὲν τῶν τοιούτων ἢν ἐπισφακελίσῃ ὁ μηρός, ἐμπυήματα χρόνια καὶ ἕμμοτα γίνεται, καὶ ὀστέων ψιλώσιες ἐνίοισιν· ὁμοίως δὲ καὶ οἷσιν ἐπισφακελίζει καὶ οἷσι μὴ ἐπισφακελίζει, τοῦ μηροῦ τὸ ὀστέον πολλῷ βραχύτερον γίνεται, καὶ οὐκ ἐθέλει συναύξεσθαι ὥσπερ τοῦ ὑγιέος· τὰ μέντοι τῆς κνήμης βραχύτερα μὲν γίνεται ἢ τὰ τῆς ἑτέρης, ὀλίγῳ δέ, διὰ τὰς αὐτὰς προφάσιας αἵ καὶ πρόσθεν εἴρηνται· ὁδοιπορεῖν τε δύνανται οἱ τοιοῦτοι, οἱ μέν τινες αὐτῶν τοῦτον τὸν τρόπον ὥσπερ οἷσι τετελειωμένοισιν ἐξέπεσε καὶ μὴ ἐνέπεσεν, οἱ δὲ καὶ βαίνουσι μὲν παντὶ τῷ ποδί, διαῤῥέπουσι δὲ ἐν τῇσι ὁδοιπορίῃσιν, ἀναγκαζόμενοι διὰ τὴν βραχύτητα τοῦ σκέλεος. ταῦτα δὲ [1] τοιαῦτα γίνεται, ἢν ἐπιμελέως μὲν παιδαγωγηθέωσιν [2] ἐν τοῖσι σχήμασι καὶ ὀρθῶς ἐν οἷσι

dislocated, and the flesh gets lubricated, it in time becomes painless; and when it becomes painless, they can walk without a crutch, at least should they wish to do so, and can put the weight of the body on the injured leg. Owing to the exercise, the flesh becomes less flaccid in such cases than in those mentioned just above; yet it does get more or less flaccid; and as a rule there is rather greater flaccidity on the inner than on the outer side. Some of these patients are unable to put on a shoe, owing to the stiffness of the leg; but some manage it. In cases where this joint is dislocated before birth, or is forcibly put out and not reduced during adolescence, or when the joint is dislocated and started from its socket by disease—such things often happen—if necrosis of the thigh-bone occurs in some of these cases, chronic abscesses are formed, requiring tents;[1] and in some there is denudation of bone. Likewise, both where there is and where there is not necrosis of the bone, it becomes much shorter, and will not grow correspondingly with the sound one. The bones of the lower leg, however, though shorter than those of the other, are but slightly so, for the same reasons as those given above. These patients can walk, some of them in the aforesaid fashion, like adults who have an unreduced dislocation; while others use the whole foot, but sway from side to side in their gait, being compelled to do so through the shortness of the leg. But such results are only attained if they are carefully instructed in the correct

[1] *i.e.* drainage apparatus.

[1] μέντοι Kw. [2] Kw.'s correction.

δεῖ, πρὶν κρατυνθῆναι ἐς τὴν ὁδοιπορίην, ἐπιμελέως δὲ καὶ ὀρθῶς, ἐπὴν κρατυνθῶσιν. πλείστης δὲ ἐπιμελείης δέονται οἷσιν ἂν νηπιωτάτοισιν ἐοῦσιν αὕτη ἡ συμφορὴ γένηται· ἢν γὰρ ἀμεληθῶσι νήπιοι ἐόντες, ἀχρήϊον παντάπασι καὶ ἀναυξὲς ὅλον τὸ σκέλος γίνεται. αἱ δὲ σάρκες τοῦ σύμπαντος σκέλεος μινύθουσι μᾶλλον ἢ τοῦ ὑγιέος· πάνυ μὲν πολλῷ ἧσσον τούτοισι μινύθουσι ἢ οἷσιν ἂν ἔσω ἐκπεπτώκῃ, διὰ τὴν χρῆσιν καὶ τὴν ταλαιπωρίην, οἷον εὐθέως δύνασθαι χρῆσθαι τῷ σκέλει, ὡς καὶ πρόσθεν ὀλίγῳ περὶ τῶν γαλιαγκώνων εἴρηται.

LVI. Εἰσὶ δέ τινες, ὧν τοῖσι μὲν ἐκ γενεῆς αὐτίκα, τοῖσι δὲ καὶ ὑπὸ νούσου ἀμφοτέρων τῶν σκελέων ἐξέστη τὰ ἄρθρα ἐς τὸ ἔξω μέρος. τούτοισιν οὖν τὰ μὲν ὀστέα ταὐτὰ παθήματα πάσχει· αἱ μέντοι σάρκες ἥκιστα ἐκθηλύνονται τοῖσι τοιούτοισιν· εὔσαρκα[1] δὲ καὶ τὰ σκέλεα γίνεται, πλὴν εἴ τι ἄρα κατὰ τὸ ἔσω μέρος ἐλλείποι[2] ὀλίγον. διὰ τοῦτο δὲ εὔσαρκά ἐστιν, ὅτι ἀμφοτέροισι τοῖσι σκέλεσι ὁμοίως ἡ χρῆσις γίνεται· ὁμοίως γὰρ σαλεύουσιν ἐν τῇ ὁδοιπορίῃ ἔνθα καὶ ἔνθα· ἐξεχέγλουτοι δὲ οὗτοι ἰσχυρῶς φαίνονται[3] διὰ τὴν ἔκστασιν τῶν ἄρθρων. ἢν δὲ μὴ ἐπισφακελίσῃ αὐτοῖσι τὰ ὀστέα, μηδὲ κυφοὶ ἀνωτέρω τῶν ἰσχίων γένωνται—ἐνίους γὰρ καὶ τοιαῦτα καταλαμβάνει—ἢν οὖν μὴ τοιοῦτόν τι γένηται, ἱκανῶς ὑγιηροὶ τἄλλα διαφέρονται· ἀναυξίστεροι μέντοι τὸ πᾶν σῶμα οὗτοι γίνονται, πλὴν τῆς κεφαλῆς.

LVII. Ὅσοισι δ' ἂν ἐς τοὔπισθεν ἡ κεφαλὴ τοῦ μηροῦ ἐκπέσῃ—ὀλίγοισι δὲ ἐκπίπτει—οὗτοι

attitudes before they have acquired strength for walking, and carefully and rightly guided when they are strong. The greatest care is required in cases where this lesion occurs when they are very young; for if they are neglected when infants, the whole leg gets altogether useless and atrophied. The flesh is attenuated throughout the leg, compared with the sound one; but the attenuation is much less in these cases than where the dislocation is inwards, owing to use and exercise, since they can use the leg at once, as was said a little before concerning the weasel-armed.

LVI. There are some cases in which the hip-joints of both legs are dislocated outwards, either immediately at birth or from disease. Here the bones are affected in the same way as was described, but there is very little flaccidity of the tissues in such cases; for the legs keep plump, except for some little deficiency on the inner side. The plumpness is due to the fact that both legs get exercised alike; for they have an even swaying gait to this side and that. These patients show very prominent haunches, because of the displacement of the hip-joints; but if no necrosis of the bones supervenes, and they do not become humped above the hips—for this is an affection which attacks some—if nothing of this sort occurs, they are distinguished by very fair health in other respects. Still, these patients have defective growth of the whole body, except the head.

LVII. In cases where the head of the thigh-bone is dislocated backwards—this is a rare dislocation—

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[1] ἅμα γὰρ εὖσαρκα. [2] ἐλλείπει.
[3] καὶ βαιβοὶ οἱ μηροί.

ἐκτανύειν οὐ δύνανται τὸ σκέλος, οὔτε κατὰ τὸ ἄρθρον τὸ ἐκπεσὸν οὔτε τι κάρτα κατὰ τὴν ἰγνύην· ἀλλ' ἥκιστα τῶν ἐκπαλησίων οὗτοι [μᾶλλον][1] ἐκτανύουσι καὶ τὸ κατὰ τὸν βουβῶνα καὶ τὸ κατὰ τὴν ἰγνύην ἄρθρον. προσσυνιέναι μὲν οὖν καὶ τόδε χρή—εὔχρηστον γὰρ καὶ πολλοῦ ἄξιόν ἐστι καὶ τοὺς πλείστους λήθει—ὅτι οὐδ' ὑγιαίνοντες δύνανται κατὰ τὴν ἰγνύην ἐκτανύειν τὸ ἄρθρον, ἢν μὴ συνεκτανύσωσι καὶ τὸ κατὰ τὸν βουβῶνα ἄρθρον, πλὴν ἢν μὴ πάνυ ἄνω ἀείρωσι τὸν πόδα, οὕτω δ' ἂν δύναιντο· οὐ τοίνυν οὐδὲ συγκάμπτειν δύνανται τὸ κατὰ τὴν ἰγνύην ἄρθρον ὁμοίως, ἀλλὰ πολὺ χαλεπώτερον, ἢν μὴ συγκάμψωσι καὶ τὸ κατὰ τὸν βουβῶνα ἄρθρον. πολλὰ δὲ καὶ ἄλλα κατὰ τὸ σῶμα τοιαύτας ἀδελφίξιας ἔχει, καὶ κατὰ νεύρων συντάσιας καὶ κατὰ μυῶν σχήματα, καὶ πλεῖστά τε καὶ πλείστου ἄξια γινώσκεσθαι ἢ ὥς τις οἴεται, καὶ κατὰ τὴν τοῦ ἐντέρου φύσιν καὶ τὴν τῆς συμπάσης κοιλίης, καὶ κατὰ τὰς τῶν ὑστέρων πλάνας καὶ συντάσιας· ἀλλὰ περὶ μὲν τούτων ἑτέρωθι λόγος ἔσται ἠδελφισμένος τοῖσι νῦν λεγομένοισι. περὶ οὗ δὲ ὁ λόγος ἐστίν, οὔτε ἐκτανύειν δύνανται, ὥσπερ ἤδη εἴρηται, βραχύτερόν τε τὸ σκέλος φαίνεται, διὰ δισσὰς προφάσιας· ὅτι τε οὐκ ἐκτανύεται, ὅτι τε πρὸς τὴν σάρκα ὠλίσθηκε τὴν τοῦ πυγαίου· ἡ γὰρ φύσις τοῦ ἰσχίου τοῦ ὀστέου ταύτῃ, ᾗ καὶ ἡ κεφαλὴ καὶ ὁ αὐχὴν τοῦ μηροῦ γίνεται, ὅταν δὲ ἐξαρθρήσῃ, καταφερής τι πέφυκεν ἐπὶ τοῦ πυγαίου τὸ ἔξω μέρος. συγκάμπτειν μέντοι δύνανται, ὅταν μὴ ἡ ὀδύνη κωλύῃ· καὶ ἡ κνήμη τε καὶ ὁ ποὺς ὀρθὰ

the patients cannot extend the leg at the dislocated joint, nor indeed at the ham; in fact, of all displacements, those who suffer this one make least extension, both at the groin and at the ham. One should also bear the following in mind—it is a useful and important matter, of which most are ignorant—that not even sound individuals can extend the joint at the ham, if they do not extend that at the groin as well, unless they lift the foot very high; then they could do it. Nor can they as readily flex the joint at the ham, unless they flex that at the groin as well, but only with much greater difficulty. Many parts of the body have affinities of this kind, both as regards contraction of cords and attitudes of muscles; and they are very numerous, and more important to recognise than one would think, both as regards the nature of the intestine and the whole body cavity, also the irregular movements and contractions of the uterus. But these matters will be discussed elsewhere in connection with the present remarks. To return to our subject—as already observed, the patients cannot extend the leg, also it appears shorter, for a double reason; both because it is not extended, and because it has slipped into the flesh of the buttock; for the hip-bone, at the part where the head and neck of the femur lie when dislocated, has a natural slope towards the outer side of the buttock. They can however flex the limb, when pain does not prevent it; and the lower leg and foot appear fairly straight,

[1] Omit Galen, Littré, Erm.

ἐπιεικῶς φαίνεται, καὶ οὔτε τῇ οὔτε τῇ πολὺ ἐκκεκλιμένα· κατὰ δὲ τὸν βουβῶνα δοκεῖ τι ἡ σὰρξ λαπαρωτέρη εἶναι ποτὶ καὶ ψαυομένη, ἅτε τοῦ ἄρθρου ἐς τὰ ἐπὶ θάτερα μέρη ὠλισθηκότος· κατὰ δὲ αὐτὸ τὸ πυγαῖον διαψαυομένη ἡ κεφαλὴ τοῦ μηροῦ δοκεῖ τι ἐξογκεῖν καὶ μᾶλλον. τὰ μὲν οὖν σημεῖα ταῦτά ἐστιν, ᾧ ἂν ἐς τὸ ὄπισθεν ἐκπεπτώκῃ ὁ μηρός.

LVIII. Ὅτεῳ μὲν οὖν ἂν τετελειωμένῳ ἤδη ἐκπεσὸν μὴ ἐμπέσῃ, ὁδοιπορεῖν μὲν δύναται, ὅταν ὁ χρόνος ἐγγένηται καὶ ἡ ὀδύνη παύσηται, καὶ ἐθισθῇ τὸ ἄρθρον ἐν τῇ σαρκὶ ἐνστρωφᾶσθαι. ἀναγκάζεται μέντοι ἰσχυρῶς συγκάμπτειν[1] κατὰ τοὺς βουβῶνας ὁδοιπορέων,[2] διὰ δισσὰς προφάσιας, ἅμα μὲν ὅτι πολλῷ βραχύτερον τὸ σκέλος γίνεται διὰ τὰ προειρημένα, καὶ τῇ μὲν πτέρνῃ καὶ πάνυ πολλοῦ δεῖται ψαύειν τῆς γῆς· εἰ γὰρ πειρήσαιτο καὶ ἐπ' ὀλίγον τοῦ ποδὸς ὀχηθῆναι, μηδενὶ ἄλλῳ ἀντιστηριζόμενος, ἐς τοὐπίσω ἂν πέσοι· ἡ γὰρ ῥοπὴ πολλὴ ἂν εἴη, τῶν ἰσχίων ἐπὶ πολὺ ἐς τοὐπίσω ὑπερεχόντων ὑπὲρ τοῦ ποδὸς τῆς βάσιος καὶ τῆς ῥάχιος ἐς τὰ ἰσχία ῥεπούσης. μόλις δὲ τῷ στήθει τοῦ ποδὸς καθικνεῖται, καὶ οὐδὲ οὕτως, ἢν μὴ κάμψῃ αὐτὸς ἑωυτὸν κατὰ τοὺς βουβῶνας, καὶ τῷ ἑτέρῳ σκέλει κατὰ τὴν ἰγνύην ἐπισυγκάμψῃ. ἐπὶ δὲ τούτοισιν ἀναγκάζεται ὥστε τῇ χειρὶ τῇ κατὰ τὸ σιναρὸν σκέλος ἐρείδεσθαι ἐς τὸ ἄνω τοῦ μηροῦ ἐφ' ἑκάστῃ συμβάσει. ἀναγκάζει οὖν τι καὶ τοῦτο αὐτὸ ὥστε κάμπτεσθαι κατὰ τοὺς βουβῶνας· ἐν γὰρ τῇ μεταλλαγῇ τῶν σκελέων ἐν τῇ ὁδοιπορίῃ

[1] συγκάμπτων. [2] ὁδοιπορεῖν.

without much inclination to either side. At the groin the flesh seems rather relaxed, especially on palpation, since the joint[1] has slipped to the other side; while at the buttock itself the head of the bone seems, on deep palpation, to stick out abnormally. These then are the signs in a case of dislocation of the thigh backwards.

LVIII. When the dislocation occurs in an adult, and is not reduced, the patient can walk, indeed, after an interval, when the pain subsides, and the head of the bone has become accustomed to rotate in the tissues; but he is obliged in walking to flex his body strongly at the groin, for a double reason, both because the leg is much shorter, owing to the causes above mentioned, and is very far from touching the ground with the heel; for if he should try even for a moment to have his weight on the foot with no opposite support, he would fall backwards, as there would be a great inclination that way, the hips coming far beyond the sole of the foot behind, and the spine inclining towards the hips.[2] He hardly reaches the ground with the ball of the foot, and cannot do this without a simultaneous flexure of the other leg at the ham. Besides, he is forced at every step to make pressure with the hand at the side of the injured leg on the upper part of the thigh. This of itself would compel him to bend the body somewhat at the groin; for at the change of

[1] "Joint" here means "articular head."

[2] L. and Erm. put the above from "for if he should try" after "displaced backwards at the hip." It gives better sense, but has no authority.

[3] Littré, followed by Ermerins, rearranges the text in an arbitrary manner.

οὐ δύναται τὸ σῶμα ὀχεῖσθαι ἐπὶ τοῦ σιναροῦ σκέλεος, ἢν μὴ προσκατερείδηται τὸ σιναρὸν πρὸς τὴν γῆν ὑπὸ τῆς χειρός, οὐχ[1] ὑφεστεῶτος τοῦ ἄρθρου ὑπὸ τῷ σώματι, ἀλλ' ἐς τὸ ὄπισθεν ἐξεστεῶτος κατὰ τὸ ἰσχίον. ἄνευ μὲν οὖν ξύλου δύνανται ὁδοιπορεῖν οἱ τοιοῦτοι, ἢν ἄλλως ἐθισθέωσιν, διὰ τοῦτο, ὅτι ἡ βάσις τοῦ ποδὸς κατὰ τὴν ἀρχαίην ἰθυωρίην ἐστίν, ἀλλ' οὐκ ἐς τὸ ἔξω ἐκκεκλιμένη· διὰ τοῦτο οὖν οὐδὲν δέονται τῆς ἀντικοντώσιος. ὅσοι μέντοι βούλονται ἀντὶ τῆς τοῦ μηροῦ ἐπιλαβῆς ὑπὸ τὴν μασχάλην τὴν κατὰ τὸ σιναρὸν σκέλος ὑποτιθέμενοι σκίπωνα ἀντερείδειν, ἐκεῖνοι, ἢν[2] μὲν μακρότερον τὸν σκίπωνα ὑποτιθέοιντο, ὀρθότερον μὲν ὁδοιποροῦσι, τῷ δὲ ποδὶ πρὸς τὴν γῆν οὐκ ἐρείδονται· εἰ δ' αὖ βούλονται ἐρείδεσθαι τῷ ποδί, βραχύτερον μὲν τὸ ξύλον φορητέον, κατὰ δὲ τοὺς βουβῶνας ἐπισυγκάμπτεσθαι ἂν δέοι αὐτούς. τῶν δὲ σαρκῶν αἱ μινυθήσιες κατὰ λόγον γίγνονται καὶ τούτοισιν, ὥσπερ καὶ πρόσθεν εἴρηται· τοῖσι μὲν γὰρ μετέωρον ἔχουσι τὸ σκέλος καὶ μηδὲν ταλαιπωρέουσι, τούτοισι καὶ μάλιστα μινύθουσιν· οἷ δ' ἂν πλεῖστα χρέωνται τῇ ἐπιβάσει, τούτοισιν ἥκιστα μινύθουσι. τὸ μέντοι ὑγιὲς σκέλος οὐκ ὠφελεῖται, ἀλλὰ μᾶλλον[3] καὶ ἀσχημονέστερον γίνεται, ἢν χρέωνται τῷ σιναρῷ σκέλει ἐπὶ τὴν γῆν· συνυπουργέον γὰρ ἐκείνῳ ἐξίσχιόν τε ἀπαναγκάζεται εἶναι, καὶ κατὰ τὴν ἰγνύην συγκάμπτειν, ἤν γε[4] μὴ προσχρέηται τῷ σιναρῷ ἐπὶ τὴν γῆν, ἀλλὰ μετέωρον ἔχων σκίπωνι ἀντερείδηται, οὕτω δὲ καρτερὸν γίνεται τὸ ὑγιὲς σκέλος· ἔν τε γὰρ τῇ φύσει διαιτᾶται, καὶ τὰ

legs in walking, the body weight cannot be carried by the injured leg unless it be further pressed to the ground by the hand, the articular head not being in line under the body, but displaced backwards at the hip.[1] Still, such patients can walk without a crutch, at any rate after practice, for this reason, viz., that the sole of the foot keeps its old straight line, and is not inclined outwards; wherefore they have no need for counter-propping. Those who prefer, instead of the grasp on the thigh, to have the support of a crutch under the arm on the side of the injured leg, if they have a rather long crutch, walk more erect; but they do not press with the foot on the ground. But if they want to make pressure with the foot, a shorter crutch must be carried; and they must also flex the body at the groin. Wasting of the flesh takes place in these cases also according to rule, as was said before; in those who keep the leg off the ground and give it no exercise the wasting is greatest, while in those who use it most in walking it is least. Still, the sound leg gets no benefit, but rather becomes also somewhat deformed, if patients use the injured leg on the ground; for in giving assistance to the latter, it is forced outwards at the hip, and bends at the ham; but if one does not use the injured leg on the ground as well, but, keeping it suspended, gets support from a crutch, the sound limb thus becomes strong; for it is employed in the natural way, and

[1] See previous note.

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[1] ἅτε οὐχ.
[2] εἰ.
[3] Omit.
[4] ἦν δὲ.

γυμνάσια προσκρατύνει αὐτό. φαίη μὲν οὖν ἄν τις, ἔξω ἰητρικῆς τὰ τοιαῦτα εἶναι· τί γὰρ δῆθεν δεῖ περὶ τῶν ἤδη ἀνηκέστων γεγονότων ἔτι προσσυνιέναι; πολλοῦ δὲ δεῖ οὕτως ἔχειν· τῆς γὰρ αὐτῆς γνώμης καὶ ταῦτα συνιέναι· οὐ γὰρ οἷόν τε ἀπαλλοτριωθῆναι ἀπ' ἀλλήλων. δεῖ μὲν γὰρ ἐς τὰ ἀκεστὰ μηχανάασθαι, ὅπως μὴ ἀνήκεστα ἔσται, συνιέντα ὅπῃ ἂν μάλιστα κωλυτέα ἐς τὸ ἀνήκεστον ἐλθεῖν· δεῖ δὲ τὰ ἀνήκεστα συνιέναι, ὡς μὴ μάτην λυμαίνηται· τὰ δὲ προῤῥήματα λαμπρὰ καὶ ἀγωνιστικὰ ἀπὸ τοῦ διαγινώσκειν ὅπῃ ἕκαστον καὶ οἵως καὶ ὁπότε τελευτήσει, ἤν τε ἐς τὸ ἀκεστὸν τράπηται, ἤν τε ἐς τὸ ἀνήκεστον. ὁπόσοισι δ' ἂν ἐκ γενεῆς ἢ καὶ ἄλλως πως ἐν αὐξήσει ἐοῦσιν οὕτως ὀλίσθῃ τὸ ἄρθρον ὀπίσω καὶ μὴ ἐμπέσῃ, ἤν τε βίῃ ὀλίσθῃ, ἤν τε καὶ ὑπὸ νούσου—πολλὰ γὰρ τοιαῦτα ἐξαρθρήματα γίνεται ἐν νούσοισιν· οἷαι δέ τινές εἰσιν αἱ νοῦσοι, ἐν ἧσιν ἐξαρθρεῖται τὰ τοιαῦτα, ὕστερον γεγράψεται—ἢν οὖν ἐκστὰν μὴ ἐμπέσῃ, τοῦ μὲν μηροῦ τὸ ὀστέον βραχὺ γίνεται, κακοῦται δὲ καὶ πᾶν τὸ σκέλος, καὶ ἀναυξέστερον γίνεται καὶ ἀσαρκότερον πολλῷ διὰ τὸ μηδὲν προσχρῆσθαι αὐτῷ· κακοῦται γὰρ τούτοισι καὶ τὸ κατὰ τὴν ἰγνύην ἄρθρον· τὰ γὰρ νεῦρα ἐντεταμένα γίνεται διὰ τὰ πρόσθεν εἰρημένα. διὸ οὐ δύνανται τὸ κατὰ τὴν ἰγνύην ἄρθρον ἐκτανύειν, οἷσιν ἂν οὕτως ἰσχίον ἐκπέσῃ. ὡς γὰρ ἐν κεφαλαίῳ εἰρῆσθαι, πάντα τὰ ἐν τῷ σώματι, ὁπόσα ἐπὶ χρήσει γέγονε, χρεομένοισι μὲν μέτρια καὶ γυμναζομένοισιν ἐν τῇσι ταλαιπωρίῃσιν, ἐν ἧσιν ἕκαστα εἴθισται, οὕτω μὲν

the exercises strengthen it more. One might say that such matters are outside the healing art. Why, forsooth, trouble one's mind further about cases which have become incurable? This is far from the right attitude. The investigation of these matters too belongs to the same science; it is impossible to separate them from one another. In curable cases we must contrive ways to prevent their becoming incurable, studying the best means for hindering their advance to incurability; while one must study incurable cases so as to avoid doing harm by useless efforts. Brilliant and effective forecasts are made by distinguishing the way, manner and time in which each case will end, whether it takes the turn to recovery or to incurability. In cases where such a dislocation backwards occurs and is not reduced, whether congenitally or during the period of growth, and whether the displacement is due to violence or disease—many such dislocations occur in diseases, and the diseases which cause such dislocations will be described later—if, then, the displacement is unreduced, the thigh-bone gets short, and the whole leg deteriorates, and becomes much more undeveloped and devoid of flesh, because it gets no exercise. For in these cases, the joint at the ham is also maimed, since the ligaments get contracted, for the reasons given above; and therefore patients in whom the leg is thus dislocated cannot extend the joint at the ham. Speaking generally, all parts of the body which have a function, if used in moderation and exercised in labours to which each is accustomed, become thereby healthy and well-

ὑγιηρὰ καὶ αὔξιμα καὶ εὔγηρα γίνεται· μὴ χρεομένοισι δέ, ἀλλ' ἐλινύουσι, νοσηρότερα γίνεται καὶ ἀναυξέα καὶ ταχύγηρα. ἐν δὲ τούτοισιν οὐχ ἥκιστα τὰ ἄρθρα τοῦτο πέπονθε καὶ τὰ νεῦρα, ἢν μή τις αὐτοῖσι χρέηται· κακοῦνται μὲν οὖν διὰ ταύτας τὰς προφάσιας μᾶλλόν τι ἐν τούτῳ τῷ τρόπῳ τοῦ ὀλισθήματος ἢ ἐν τοῖσι ἄλλοισιν· ὅλον γὰρ τὸ σκέλος ἀναυξὲς γίνεται, καὶ τῇ ἀπὸ τῶν ὀστέων φύσει καὶ τῇ ἀπὸ τῶν σαρκῶν. οἱ οὖν τοιοῦτοι ὁπόταν ἀνδρωθῶσι, μετέωρον καὶ συγκεκαμμένον τὸ σκέλος ἴσχουσιν, ἐπὶ δὲ τοῦ ἑτέρου ὀχέονται, καὶ τῷ ξύλῳ ἀντιστηριζόμενοι, οἱ μὲν ἑνί, οἱ δὲ δυσίν.

LIX. Οἵσι δ' ἂν ἐς τοὔμπροσθεν ἡ κεφαλὴ τοῦ μηροῦ ἐκπέσῃ—ὀλίγοισι δὲ τοῦτο γίνεται—οὗτοι ἐκτανύειν μὲν τὸ σκέλος δύνανται τελέως, συγκάμπτειν δὲ ἥκιστα οὗτοι δύνανται τὰ κατὰ τὸν βουβῶνα· πονέουσι δέ, καὶ ἢν κατὰ τὴν ἰγνύην ἀναγκάζωνται συγκάμπτειν. μῆκος δὲ τοῦ σκέλεος παραπλήσιον φαίνεται, κατὰ μὲν τὴν πτέρνην καὶ πάνυ· ἄκρος δὲ ὁ ποὺς ἧσσόν τι προκύπτειν ἐθέλει·[1] ὅλον δὲ τὸ σκέλος ἔχει τὴν ἰθυωρίην τὴν κατὰ φύσιν, καὶ οὔτε τῇ οὔτε τῇ ῥέπει. ὀδυνῶνται δὲ αὐτίκα οὗτοι μάλιστα, καὶ οὖρον ἴσχεται τὸ πρῶτον τούτοισι μᾶλλόν τι ἢ τοῖσιν ἄλλοισιν ἐξαρθρήμασιν· ἔγκειται γὰρ ἡ κεφαλὴ τοῦ μηροῦ ἐγγυτάτω τούτοισι τῶν τόνων τῶν ἐπικαίρων. καὶ κατὰ μὲν τὸν βουβῶνα ἐξόγκεόν τε καὶ κατατεταμένον τὸ χωρίον φαίνεται, κατὰ δὲ τὸ πυγαῖον στολιδωδέστερον καὶ ἀσαρκότερον. ταῦτα μὲν οὖν σημεῖά ἐστι τὰ εἰρημένα, ὧν ἂν οὕτως ἐκπεπτώκῃ ὁ μηρός.

developed, and age slowly; but if unused and left idle, they become liable to disease, defective in growth, and age quickly. This is especially the case with joints and ligaments, if one does not use them. For these reasons, patients are more troubled by this sort of dislocation than by the other; for the whole leg is atrophied in the natural growth both of bone and flesh. Such patients, then, when they become adults, keep the leg raised and contracted, and walk on the other, supporting themselves, some with one and some with two crutches.

LIX. Those in whom the head of the thigh-bone is dislocated forwards—a rare occurrence—can extend the leg completely, but are least able to flex it at the groin; and they suffer pain even if they are compelled to bend it at the ham. The length of the leg seems about equal, and quite so at the heel; but there is less power of pointing the foot. The whole leg preserves its natural straight line, inclining neither to one side nor the other. It is in these cases that the immediate pain is greatest, and retention of urine occurs from the first more than in other dislocations; for the head of the femur in these cases lies very close to important cords. The region of the groin appears prominent and tense; but at the buttock it is rather wrinkled and fleshless. The above-mentioned signs, then, occur in patients whose thigh is put out in this way.

[1] ἐθέλει = δύναται, says Galen, comparing *Iliad* XXI. 366.

LX. Ὁπόσοισι μὲν οὖν ἂν ἤδη ἠνδρωμένοισι τοῦτο τὸ ἄρθρον ἐκπεσὸν μὴ ἐμπέσῃ, οὗτοι, ὁπόταν αὐτοῖσιν ἡ ὀδύνη παύσηται καὶ τὸ ἄρθρον ἐθισθῇ ἐν τῷ χωρίῳ τούτῳ στρωφᾶσθαι, ἵνα ἐξέπεσεν, οὗτοι δύνανται σχεδὸν εὐθὺς[1] ὀρθοὶ ὁδοιπορεῖν ἄνευ ξύλου, καὶ πάνυ μέντοι εὐθέες, ἐπὶ δὲ[2] τὸ σιναρόν, ἅτε οὔτε κατὰ τὸν βουβῶνα εὔκαμπτοι ἐόντες, οὔτε κατὰ τὴν ἰγνύην· διὰ οὖν τοῦ βουβῶνος τὴν ἀκαμπίην εὐθυτέρῳ ὅλῳ τῷ σκέλει ἐν τῇ ὁδοιπορίῃ χρέονται[3] ἢ ὅτε ὑγίαινον. καὶ σύρουσι δὲ ἐνίοτε πρὸς τὴν γῆν τὸν πόδα, ἅτε οὐ ῥηϊδίως συγκάμπτοντες τὰ ἄνω ἄρθρα, καὶ ἅτε παντὶ βαίνοντες τῷ ποδί· οὐδὲν γὰρ ἧσσον τῇ πτέρνῃ οὗτοι βαίνουσιν ἢ τῷ ἔμπροσθεν· εἰ δέ γε ἠδύναντο μέγα προβαίνειν, κἂν πάνυ πτερνοβάται ἦσαν· καὶ γὰρ οἱ ὑγιαίνοντες, ὅσῳ ἂν μέζον προβαίνοντες ὁδοιπορέωσι, τοσούτῳ μᾶλλον πτερνοβάται εἰσί, τιθέντες τὸν πόδα, αἴροντες τὸν ἐναντίον. ὁπόσοισι δὲ δὴ οὕτως ἐκπέπτωκε, καὶ ἔτι μᾶλλον τῇ πτέρνῃ προσεγχρίμπτουσιν ἢ τῷ ἔμπροσθεν· τὸ γὰρ ἔμπροσθεν τοῦ ποδός, ὁπόταν ἐκτεταμένον ᾖ τὸ ἄλλο σκέλος, οὐχ ὁμοίως δύναται ἐς τὸ πρόσω καμπύλλεσθαι, ὥσπερ ὅταν συγκεκαμμένον ᾖ τὸ σκέλος· οὐκ αὖ σιμοῦσθαι δύναται ὁ πούς, συγκεκαμμένου[4] τοῦ σκέλεος, ὡς ὅταν ἐκτεταμένον ᾖ τὸ σκέλος. ὑγιαίνουσά τε οὖν ἡ φύσις οὕτω πέφυκεν, ὥσπερ εἴρηται· ὅταν δὲ ἐκπεσὸν μὴ ἐμπέσῃ τὸ ἄρθρον, οὕτως ὁδοιπορέουσιν ὡς εἴρηται, διὰ τὰς προφάσιας ταύτας τὰς εἰρημένας· ἀσαρκότερον μέντοι τὸ σκέλος τοῦ ἑτέρου γίνεται, κατά τε τὸ πυγαῖον, κατά τε τὴν

LX. In cases where this dislocation occurs in those already adult and is not reduced, these patients, when their pain subsides and the head of the bone has got accustomed to turning in the locality where it was displaced, are able to walk almost at once erect without a crutch, and even quite straight up, so far as the injured part is concerned, seeing that it cannot easily bend either at the groin or ham. Thus, owing to the stiffness at the groin, they keep the whole leg straighter in walking than when it was sound. And sometimes they drag the foot along the ground, seeing that they cannot easily flex the upper joints, and that they walk on the whole foot. In fact, they walk as much on the heel as on the front part; and if they could take long strides, they would be purely heel-walkers. For those with sound limbs, the longer the strides they take in walking, the more they go on their heels when putting down one leg and raising the other; but those who have this form of dislocation press upon the heel even more than on the front of the foot. For the front of the foot cannot be so well bent down when the leg is extended as when it is flexed; nor, on the other hand, can the foot be bent upwards when the leg is flexed so well as when it is extended. This is what happens in the natural sound condition, as was said; but when the joint is dislocated and not reduced, they walk in the way described, for the reasons given above. The leg, however, becomes less fleshy than the other, both

[1] Kw. omits.
[2] ἐπί γε.
[3] χρέωνται.
[4] συγκεκλιμένου.

γαστροκνημίην, καὶ κατὰ τὴν ὄπισθεν ἴξιν. οἷσι δ' ἂν νηπίοισιν ἔτι ἐοῦσι τὸ ἄρθρον [οὕτως] ὀλισθὸν μὴ ἐμπέσῃ, ἢ καὶ ἐκ γενεῆς οὕτω γένηται, καὶ τούτοισι τὸ τοῦ μηροῦ ὀστέον μᾶλλόν τι μινύθει ἢ τὰ τῆς κνήμης καὶ τὰ τοῦ ποδός. ἥκιστα μὲν ἐν τούτῳ τῷ τρόπῳ τοῦ ὀλισθήματος ὁ μηρὸς μειοῦται. μινύθουσι μέντοι αἱ σάρκες πάντη, μάλιστα δὲ κατὰ τὴν ὄπισθεν ἴξιν, ὥσπερ ἤδη καὶ πρόσθεν εἴρηται. ὁπόσοι μὲν οὖν ἂν τιθηνηθέωσιν ὀρθῶς, οὗτοι μὲν δύνανται προσχρῆσθαι τῷ σκέλει αὐξανόμενοι, βραχυτέρῳ μέν τινι τοῦ ἑτέρου ἐόντι, ὅμως δὲ ἐρειδόμενοι ξύλῳ ἐπὶ ταῦτα, ἢ τὸ σιναρὸν σκέλος· οὐ γὰρ κάρτα δύνανται ἄνευ τῆς πτέρνης τῷ στήθει τοῦ ποδὸς χρῆσθαι, ἐπικαθιέντες ὥσπερ ἐν ἑτέροισι χωλεύμασι ἔνιοι δύνανται· αἴτιον δὲ τοῦ μὴ δύνασθαι τὸ ὀλίγῳ πρόσθεν εἰρημένον· διὰ οὖν τοῦτο προσδέονται ξύλου. ὁπόσοι δ' ἂν καταμεληθέωσι καὶ μηδὲν χρέωνται ἐπὶ τὴν γῆν τῷ σκέλει, ἀλλὰ μετέωρον ἔχωσι, τούτοισι μινύθει μὲν τὰ ὀστέα ἐς αὔξησιν μᾶλλον ἢ τοῖσι χρεομένοισιν· μινύθουσι δὲ [καὶ] αἱ σάρκες πολὺ μᾶλλον ἢ τοῖσι χρεομένοισι· κατὰ δὲ τὰ ἄρθρα ἐς τὸ εὐθὺ πηροῦται τούτοισι τὸ σκέλος μᾶλλόν τι ἢ οἷσι ἂν ἄλλως ἐκπεπτώκῃ.

LXI. Ὡς μὲν οὖν ἐν κεφαλαίῳ εἰρῆσθαι, τὰ ἄρθρα τὰ ἐκπίπτοντα καὶ τὰ ὀλισθάνοντα ἀνίσως αὐτὰ ἑωυτοῖσιν ἐκπίπτει καὶ ὀλισθάνει, ἄλλοτε μὲν πολὺ πλέον, ἄλλοτε δὲ πολὺ ἔλασσον· καὶ οἷσι μὲν ἂν [πολὺ][1] πλέον ὀλίσθῃ ἢ ἐκπέσῃ, χαλεπώτερα ἐμβάλλειν τὸ ἐπίπαν ἐστί, καὶ ἢν μὴ ἐμβιβασθῇ, μέζους καὶ ἐπιδηλοτέρας τὰς

at the buttock and calf and all down the back of it. In those cases too where it is dislocated in childhood and not reduced, or where dislocation occurs congenitally, the thigh-bone is rather more atrophied than the bones of the leg and foot; but atrophy of the thigh-bone is least in this form of dislocation. The tissues are atrophied in the whole limb, but especially down the back of it, as was said before. Those, then, who are properly cared for are able to use the leg when they grow up, though it is a little shorter than the other; yet they do it by having a support on the side of the injured limb, for they have not much ability to use the ball of the foot without the heel, bringing it down, as some can do in other forms of lameness. The reason of their not being able is that mentioned a little above; and this is why they require a staff. In those who are neglected, and never use the leg to walk with, but keep it in the air, the bones are more atrophied than in those who do use it; and the tissues are much more atrophied than in those who use the leg. As regards the joints, the lesion keeps the leg straighter in these patients than in those who have other forms of dislocation.

LXI. To sum up—dislocations and slipping [separation][1] of joints vary among themselves in amount, and are sometimes much greater, sometimes much less. In cases where the slipping or dislocation is greater, it is, in general, harder to reduce; and, if unreduced, the resulting lesions and disabilities are

[1] It is usual to make *ὀλισθαίνω*, *ὀλίσθημα* refer to "partial dislocation"; but this hardly suits the context, or the reference to shoulder and hip-joints.

[1] Kw. omits.

πηρώσιας καὶ κακώσιας ἴσχει τὰ τοιαῦτα, καὶ ὀστέων καὶ σαρκῶν καὶ σχημάτων· ὅταν δὲ μεῖον ἐκπέσῃ καὶ ὀλίσθῃ, ῥηϊδιον μὲν ἐμβάλλειν τὰ τοιαῦτα τῶν ἑτέρων γίνεται· ἢν δὲ καταποληθῇ ἢ ἀμεληθῇ ἐμπεσεῖν, μείους καὶ ἀσινέστεραι αἱ πηρώσιες γίνονται τούτοισιν ἢ οἷσιν ὀλίγῳ πρόσθεν εἴρηται. τὰ μὲν οὖν ἄλλα ἄρθρα καὶ πάνυ πολὺ διαφέρει ἐς τὸ ὁτὲ μὲν μεῖον, ὁτὲ δὲ μέζον τὸ ὀλίσθημα ποιεῖσθαι· μηροῦ δὲ καὶ βραχίονος κεφαλαὶ παραπλησιώτατα ὀλισθάνουσιν αὐτὴ ἑωυτῇ ἑκατέρη· ἅτε γὰρ στρογγύλαι μὲν αἱ κεφαλαὶ ἐοῦσαι, ἁπλῆν τὴν στρογγύλωσιν καὶ φαλακρὴν ἔχουσι, κυκλοτερεῖς δὲ αἱ κοιλίαι ἐοῦσαι αἱ δεχόμεναι τὰς κεφαλάς, ἁρμόζουσι δὲ τῇσι κεφαλῇσιν· διὰ τοῦτο οὐκ ἔστιν αὐτῇσι τὸ ἥμισυ ἐκστῆναι τοῦ ἄρθρου· ὀλισθάνοι γὰρ ἂν διὰ τὴν περιφερείην, ἢ ἐς τὸ ἔξω ἢ ἐς τὸ ἔσω. περὶ οὗ οὖν ὁ λόγος, ἐκπίπτουσι τελέως ἤδη, ἐπεὶ ἄλλως γε οὐκ ἐκπίπτουσι· ὅμως δὲ καὶ ταῦτα ὁτὲ μὲν πλεῖον ἀποπηδᾷ ἀπὸ τῆς φύσιος, ὁτὲ δὲ ἔλασσον· μᾶλλον δέ τι μηρὸς τοῦτο βραχίονος πέπονθεν.

LXII. Ἐπεὶ ἔνια καὶ τῶν ἐκ γενεῆς ὀλισθημάτων, ἢν μικρὸν ὀλίσθῃ, οἷά τε ἐς τὴν φύσιν ἄγεσθαι, καὶ μάλιστα τὰ παρὰ τοῦ ποδὸς ἄρθρα. ὁπόσοι ἐκ γενεῆς κυλλοὶ γίνονται, τὰ πλεῖστα τούτων ἰήσιμά ἐστιν, ἢν μὴ πάνυ μεγάλη ἡ ἔκκλισις ᾖ, ἢ καὶ προαυξέων γεγονότων ἤδη τῶν παιδίων συμβῇ. ἄριστον μὲν οὖν ὡς τάχιστα ἰητρεύειν τὰ τοιαῦτα, πρὶν πάνυ μεγάλην τὴν ἔνδειαν τῶν ὀστέων τῶν ἐν τῷ ποδὶ γενέσθαι, πρίν τε πάνυ μεγάλην τὴν ἔνδειαν τῶν σαρκῶν

greater and more manifest in the bones, the soft parts, and the attitudes. When there is less displacement, either with dislocation or separation, reduction is easier than in other cases; and if they are not reduced, owing to inability or neglect, the resulting deformities are smaller and less serious than in the cases just mentioned. Joints in general, then, differ very much in having their displacements sometimes less and sometimes greater; but the heads of the thigh and arm-bones each slip out in very similar ways; for the heads, being rounded, have a smooth and regular spherical surface, and the cavities which receive them, being also circular, fit the heads. Wherefore it is impossible for them to be put half out; for owing to the circular rim, it would slip either out or in. As regards our subject, then, they are put quite out, since otherwise they are not put out at all. Yet even these joints spring away, sometimes more, sometimes less, from the natural position. This is more pronounced in the thigh-bone than in the arm.

LXII. There are certain congenital displacements which, when they are slight, can be reduced to their natural position, especially those at the foot-joints. Cases of congenital club-foot are, for the most part, curable, if the deviation is not very great or the children advanced in growth. It is therefore best to treat such cases as soon as possible, before there is any very great deficiency in the bones of the foot, and

τῶν κατὰ τὴν κνήμην εἶναι. τρόπος μὲν οὖν κυλλώσιος οὐχ εἷς, ἀλλὰ πλείονες, τὰ πλεῖστα μὴν οὐκ ἐξηρθρηκότα παντάπασιν, ἀλλὰ δι' ἔθος σχήματος ἔν τινι ἀπολήψει τοῦ ποδὸς κεκυλλωμένα. προσέχειν δὲ καὶ ἐν τῇ ἰητρείῃ τοισίδε χρή· ἀπωθεῖν μὲν καὶ κατορθοῦν τῆς κνήμης τὸ κατὰ τὸ σφυρὸν ὀστέον τὸ ἔξωθεν ἐς τὸ ἔσω μέρος, ἀντωθεῖν δὲ ἐς τὸ ἔξω μέρος τὸ τῆς πτέρνης τὸ κατὰ τὴν ἴξιν, ὅπως ἀλλήλοις ἀπαντήσῃ τὰ ὀστέα τὰ ἐξίσχοντα κατὰ μέσον τε καὶ πλάγιον τὸν πόδα· τοὺς δ' αὖ δακτύλους ἀθρόους σὺν τῷ μεγάλῳ δακτύλῳ ἐς τὸ ἔσω μέρος ἐγκλίνειν καὶ περιαναγκάζειν οὕτως· ἐπιδεῖν δὲ κηρωτῇ ἐῤῥητινωμένῃ εὖ, καὶ σπλήνεσι καὶ ὀθονίοισι μαλθακοῖσι μὴ ὀλίγοισι, μηδὲ ἄγαν πιέζοντα· οὕτω δὲ τὰς περιαγωγὰς ποιεῖσθαι τῆς ἐπιδέσιος, ὥσπερ καὶ τῇσι χερσὶν ἡ κατόρθωσις ἦν τοῦ ποδός, ὅπως ὁ ποὺς ὀλίγῳ μᾶλλον ἐς τὸ βλαισὸν ῥέπων φαίνηται. ἴχνος δέ τι χρὴ ποιεῖσθαι ἢ δέρματος μὴ ἄγαν σκληροῦ, ἢ μολύβδινον,[1] προσεπιδεῖν δέ, μὴ πρὸς τὸν χρῶτα τιθέντα, ἀλλ' ὅταν ἤδη τοῖσι ὑστάτοισιν ὀθονίοισι μέλλῃς ἐπιδεῖν· ὅταν δὲ ἤδη ἐπιδεδεμένος ᾖ, ἑνός τινος τῶν ὀθονίων χρή, οἷσιν ἐπιδεῖται, τὴν ἀρχὴν προσράψαι πρὸς τὰ κατὰ τοῦ ποδὸς ἐπιδέσματα κατὰ τὴν ἴξιν τοῦ μικροῦ δακτύλου· ἔπειτα ἐς τὸ ἄνω τείνοντα ὅπως ἂν δοκῇ μετρίως ἔχειν, περιβάλλειν ἄνωθεν τῆς γαστροκνημίης, ὡς μόνιμον ᾖ, κατατεταμένον οὕτως. ἁπλῷ δὲ λόγῳ, ὥσπερ κηροπλαστέοντα, χρὴ ἐς τὴν φύσιν τὴν δικαίην ἄγειν καὶ τὰ ἐκκεκλιμένα καὶ τὰ συντεταμένα παρὰ τὴν φύσιν,

[1] μολυβδῖνον.

before the like occurs in the tissues of the leg. Now the mode of club-foot is not one, but manifold; and most cases are not the result of complete dislocation, but are deformities due to the constant retention of the foot in a contracted position.[1] The things to bear in mind in treatment are the following: push back and adjust the bone of the leg at the ankle from without inwards, making counter-pressure outwards on the bone of the heel where it comes in line with the leg, so as to bring together the bones which project at the middle and side of the foot; at the same time, bend inwards and rotate the toes all together, including the big toe. Dress with cerate well stiffened with resin, pads and soft bandages, sufficiently numerous, but without too much compression. Bring round the turns of the bandaging in a way corresponding with the manual adjustment of the foot, so that the latter has an inclination somewhat towards splay-footedness.[2] A sole should be made of not too stiff leather or of lead, and should be bound on as well, not immediately on to the skin, but just when you are going to apply the last dressings. When the dressing is completed, the end of one of the bandages used should be sewn on to the under side of the foot-dressings, in a line with the little toe; then, making such tension upwards as may seem suitable, pass it round the calf-muscle at the top, so as to keep it firm and on the stretch.[3] In a word, as in wax modelling, one should bring the parts into their true natural position, both those that are twisted and

[1] *I.e.* "an unnatural contraction of the muscles, ligaments and fasciae."

[2] *I.e. valgus* (outward distortion).

[3] *I.e.* so as to hold up the outer side of the foot.

καὶ τῇσι χερσὶν οὕτω διορθοῦντα, καὶ τῇ ἐπιδέσει ὡσαύτως, προσάγειν δὲ οὐ βιαίως, ἀλλὰ παρηγορικῶς· προσράπτειν δὲ τὰ ὀθόνια, ὅπως ἂν συμφέρῃ τὰς ἀναλήψιας ποιεῖσθαι· ἄλλα γὰρ ἄλλης τῶν χωλωμάτων δεῖται ἀναλήψιος. ὑποδημάτιον δὲ ποιεῖσθαι[1] μολύβδινον, ἔξωθεν τῆς ἐπιδέσιος ἐπιδεδεμένον, οἷον αἱ Χῖαι [κρηπῖδες][2] ῥυθμὸν εἶχον· ἀλλ' οὐδὲν αὐτοῦ δεῖ, ἤν τις ὀρθῶς μὲν τῇσι χερσὶ διορθώσῃ, ὀρθῶς δὲ τοῖσιν ὀθονίοισιν ἐπιδέῃ, ὀρθῶς δὲ καὶ τὰς ἀναλήψιας ποιοῖτο.[3] ἡ μὲν οὖν ἴησις αὕτη, καὶ οὔτε τομῆς οὔτε καύσιος οὐδὲν δεῖ, οὔτ' ἄλλης ποικιλίης· θᾶσσον γὰρ ἐνακούει τὰ τοιαῦτα τῆς ἰητρείης ἢ ὡς ἄν τις οἴοιτο. προσνικᾶν μέντοι χρὴ τῷ χρόνῳ, ἕως ἂν αὐξηθῇ τὸ σῶμα ἐν τοῖσι δικαίοισι σχήμασιν. ὅταν δὲ ἐς ὑποδήματος λόγον ἴῃ, ἀρβύλαι ἐπιτηδειόταται αἱ πηλοπατίδες καλεόμεναι· τοῦτο γὰρ ὑποδημάτων ἥκιστα κρατεῖται ὑπὸ τοῦ ποδός, ἀλλὰ κρατεῖ μᾶλλον· ἐπιτήδειος δὲ καὶ ὁ Κρητικὸς τρόπος τῶν ὑποδημάτων.

LXIII. Ὁπόσοισι δ' ἂν κνήμης ὀστέα ἐξαρθρήσαντα καὶ ἕλκος ποιήσαντα τελέως ἐξίσχῃ κατὰ τὰ παρὰ τὸν πόδα ἄρθρα, εἴτε ἔσω ῥέψαντα, εἴτε μέντοι καὶ ἔξω, τὰ τοιαῦτα μὴ[4] ἐμβάλλειν, ἀλλ' ἐᾷν τὸν βουλόμενον τῶν ἰητρῶν ἐμβάλλειν. σαφέως γὰρ εἰδέναι χρὴ ὅτι ἀποθανεῖται ᾧ ἂν ἐμβληθέντα ἐμμείνῃ, καὶ ἡ ζωὴ δὲ ὀλιγήμερος τούτοισι γενήσεται·[5] ὀλίγοι γὰρ ἂν αὐτῶν τὰς ἑπτὰ ἡμέρας ὑπερβάλλοιεν· σπασμὸς γὰρ ὁ κτείνων

[1] ποιεῖν.
[2] κρηπῖδες Galen : omit Kw. and MSS. As Kw. shows, it is inserted from the Commentary.
[3] ποιῆται. [4] οὐ χρὴ. [5] γίνεται.

those that are abnormally contracted, adjusting them in this way both with the hands and by bandaging in like manner; but draw them into position by gentle means, and not violently. Sew on the bandages so as to give the appropriate support; for different forms of lameness require different kinds of support. A leaden shoe shaped as the Chian[1] boots used to be might be made, and fastened on outside the dressing; but this is quite unnecessary if the manual adjustment, the dressing with bandages, and the contrivance for drawing up are properly done. This then is the treatment, and there is no need for incision, cautery, or complicated methods; for such cases yield to treatment more rapidly than one would think. Still, time is required for complete success, till the part has acquired growth in its proper position. When the time has come for footwear, the most suitable are the so-called "mud-shoes," for this kind of boot yields least to the foot; indeed, the foot rather yields to it. The Cretan form[2] of footwear is also suitable.[3]

LXIII. In cases where the leg-bones are dislocated and, making a wound, project right through at the ankle-joint, whether it be towards the inner or outer side, do not reduce such a lesion; but let any practitioner who chooses do so.[4] For you may be certain that where there is permanent reduction the patients will die, and life in such cases lasts only a few days. Few go beyond seven days. Spasm

[1] Erotian says it was a "woman's boot." In Galen's time it was quite forgotten.

[2] "Reaching to the middle of the leg." Galen.

[3] "The most wonderful chapter in ancient surgery." Adams.

[4] *I. e.* leave it to anyone reckless enough.

ἐστίν· ἀτὰρ καὶ γαγγραινοῦσθαι ἱκνεῖται τὴν κνήμην καὶ τὸν πόδα. ταῦτα βεβαίως εἰδέναι χρὴ οὕτως ἐσόμενα· καὶ οὐκ ἄν μοι δοκεῖ οὐδὲ ἑλλέβορος ὠφελήσειν[1] αὐθημερόν τε δοθεὶς καὶ αὖθις πινόμενος, ἄγχιστα δὲ εἴπερ τι τοιοῦτο[ν].[2] οὐ μέντοι γε οὐδὲ τοῦτο δοκέω. ἢν δὲ μὴ ἐμβληθῇ, μηδὲ ἀπ' ἀρχῆς μηδεὶς πειρηθῇ ἐμβάλλειν, περιγίνονται οἱ πλεῖστοι αὐτῶν. χρὴ δὲ ἡρμόσθαι μὲν τὴν κνήμην καὶ τὸν πόδα οὕτως, ὡς αὐτὸς ἐθέλει, μοῦνον δὲ μὴ ἀπαιωρεύμενα μηδὲ κινεύμενα ἔστω. ἰητρεύειν δὲ πισσηρῇ καὶ σπλήνεσιν οἰνηροῖσιν ὀλίγοισι, μὴ ἄγαν ψυχροῖσι· ψῦχος γὰρ ἐν τοῖσι τοιούτοισι σπασμὸν ἐπικαλεῖται. ἐπιτήδεια δὲ καὶ φύλλα σεύτλων ἢ βηχίου ἢ ἄλλου τινὸς τῶν τοιούτων ἐν οἴνῳ μέλανι αὐστηρῷ ἡμίεφθα ἐπιτιθέντα ἰητρεύειν ἐπί τε τὸ ἕλκος ἐπί τε τὰ περιέχοντα, κηρωτῇ δὲ χλιερῇ ἐπιχρίειν[3] αὐτὸ τὸ ἕλκος· ἢν δὲ ἡ ὥρη χειμερινὴ ᾖ, καὶ ἔρια ῥυπαρὰ οἴνῳ καὶ ἐλαίῳ καταῤῥαίνοντα χλιεροῖσιν ἄνωθεν ἐπιτέγγειν· καταδεῖν δὲ μηδὲν μηδενί,[4] μηδὲ περιπλάσσειν μηδενί· εὖ γὰρ εἰδέναι χρὴ ὅτι πίεξις καὶ ἀχθοφορίη πᾶν κακὸν τοῖσι τοιούτοισίν ἐστιν. ἐπιτήδεια δὲ πρὸς τὰ τοιαῦτα καὶ τῶν ἐναίμων μετεξέτερα, ὅσοισιν αὐτῶν συμφέρει· ἔρια δὲ ἐπιτιθέντα, οἴνῳ ἐπιτέγγοντα, πολὺν χρόνον ἐᾷν· τὰ δὲ ὀλιγημερώτατα τῶν ἐναίμων καὶ ὅσα ῥητίνῃ προσκαταλαμβάνεται οὐχ ὁμοίως ἐπιτήδεια ἐκείνοισίν ἐστιν. χρονίη ἡ κάθαρσις τῶν ἑλκέων γίνεται τούτων· πολὺν γὰρ χρόνον πλαδαρὴ γίνεται· τινὰς δὲ τούτων χρηστὸν ἐπιδεῖν. εἰδέναι

[1] ὠφελῆσαι.

(tetanus) is the cause of death; but gangrene of the leg and foot is also a sequel. It should be well known that this will happen; and I do not suppose that even hellebore, given on the day of the accident and repeated, would do good. If anything would help, something of this kind would come nearest; but I have no confidence even in that. But if there is no reduction or attempt at reduction to begin with, most of them survive. The leg and foot should be disposed as the patient himself wishes, only avoiding an unsupported position or movement. Treat with pitch cerate and a few compresses steeped in wine, not too cold; for cold in such cases evokes spasm. Other suitable applications are leaves of beet or colt's-foot or something similar, half-boiled in dark astringent wine, and applied both to the wound and the parts around it. Anoint the wound itself with warm cerate, and, if it is winter, apply an upper moist dressing of crude wool, sprinkling it with warm wine and oil; but avoid all bandaging and dressing with plasters, for one must bear well in mind that pressure and weight do nothing but harm in such cases. Some of the applications for fresh wounds are also suitable for these injuries, in cases where they are useful. Cover with wool, moistening it with wine, and leave on a long time. The wound remedies which last a very short time, and those incorporated with resin, are not so suitable for those patients; for the cleansing of these wounds then takes more time, since the flabby moist stage is prolonged. Bandaging is good for some of these cases. Finally, one should bear

[2] τοιοῦτον Galen. [3] ἐπυχρεῖν.
[4] Omit Kw. and many MSS.

μὲν δή που σάφα χρὴ ὅτι ἀνάγκη τὸν ἄνθρωπον χωλὸν αἰσχρῶς γενέσθαι· καὶ γὰρ ὁ ποὺς ἐς τὸ ἄνω ἀνέσπασται τῶν τοιούτων, καὶ τὰ ὀστέα τὰ διολισθήσαντα ἔξω ἐξέχοντα φαίνεται· οὔτε γὰρ ψιλοῦται τῶν τοιούτων ὀστέων οὐδὲν ὡς ἐπιτοπολύ, εἰ μὴ κατὰ βραχύ τι, οὐδὲ ἀφίσταται, ἀλλὰ περιωτειλοῦται λεπτῇσιν ὠτειλῇσι καὶ ἀσθενέσι, καὶ ταῦτα ἢν ἀτρεμίζωσι πολὺν χρόνον· ἢν[1] δὲ μή, ἑλκύδριον ἐγκαταλειφθῆναι κίνδυνος ἀναλθές. ὅμως δέ, περὶ οὗ ὁ λόγος, οὕτω μὲν ἰητρευόμενοι σώζονται, ἐμβληθέντος δὲ τοῦ ἄρθρου καὶ ἐμμείναντος, ἀποθνήσκουσιν.

LXIV. Οὑτὸς δὲ λόγος οὗτος, ἢν καὶ τὰ τοῦ πήχεος ὀστέα τὰ παρὰ τὸν καρπὸν τῆς χειρὸς ἕλκος ποιήσαντα ἐξίσχῃ, ἤν τε ἐς τὸ ἔσω μέρος τῆς χειρός, ἤν τε ἐς τὸ ἔξω. σάφα γὰρ ἐπίστασθαι χρὴ ὅτι ἀποθανεῖται ἐν ὀλίγῃσιν ἡμέρῃσι τοιούτῳ θανάτῳ, οἵῳπερ καὶ πρόσθεν εἴρηται, ὅτῳ ἂν ἐμβληθέντα τὰ ὀστέα ἐμμένῃ.[2] οἵσι δ' ἂν μὴ ἐμβληθῇ μηδὲ πειρηθῇ ἐμβάλλεσθαι, οὗτοι πολὺ πλείονες περιγίνονται. ἰητρείη δὲ τοιαύτη τοῖσι τοιούτοισιν ἐπιτηδείη, οἵῃπερ εἴρηται· τὸ δὲ σχῆμα αἰσχρὸν τοῦ χωλώματος ἀνάγκη εἶναι, καὶ τοὺς δακτύλους τῆς χειρὸς ἀσθενέας καὶ ἀχρείους· ἢν μὲν γὰρ ἐς τὸ ἔσω μέρος ὀλίσθῃ τὰ ὀστέα, συγκάμπτειν οὐ δύνανται τοὺς δακτύλους· ἢν δὲ ἐς τὸ ἔξω μέρος, ἐκτανύειν οὐ δύνανται.

LXV. Ὅσοισι δ' ἂν κνήμης ὀστέον, ἕλκος ποιησάμενον παρὰ τὸ γόνυ, ἔξω ἐξίσχῃ, ἤν τε ἐς τὸ ἔξω μέρος, ἤν τε ἐς τὸ ἔσω, τούτοισιν ἢν μέν τις ἐμβάλῃ, ἔτι ἑτοιμότερος ὁ θάνατός ἐστιν ἤπερ τοῖσιν ἑτέροισιν, καίπερ κἀκείνοισιν ἕτοιμος

clearly in mind that the patient will necessarily be deformed and lame; for the foot is drawn up, and the projection of the dislocated bones is obvious. There is no denudation of the bones as a rule, except to a slight extent, nor do they come away; but they get scarred over with thin and weak tissue—that is, if the patients keep at rest for a long time; otherwise there is risk of a small incurable ulcer being left. However, to return to our subject, those thus treated are saved; but if the joint is reduced and keeps its place, they die.

LXIV. The same remarks apply to cases where the bones of the forearm make a wound and stick out at the wrist, whether on the inner or outer side of the hand.[1] For one should understand clearly that the patient will die in a few days in the way which was mentioned above, if the bones are reduced and keep in place; but if there is no reduction or attempt at reduction, the great majority survive. The suitable treatment in such cases is such as was described, but the lesion is necessarily a deformity, and the fingers are weak and useless; for if the bones are displaced inwards, they cannot flex the fingers, if outwards, they cannot extend them.[2]

LXV. In cases where a bone of the leg makes a wound at the knee and projects either to the outer or inner side, death is more imminent, if one reduces the dislocation, than in the other cases, though it is

[1] Our "forwards or backwards."
[2] See note on wrist dislocation.

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[1] εἰ. [2] ἐμμεινῃ.

ἐών. ἢν δὲ μὴ ἐμβαλὼν ἰητρεύῃς, ἐλπίδες μὲν σωτηρίης οὕτω μόνως εἰσίν· κινδυνωδέστερα δὲ ταῦτα τῶν ἑτέρων γίνεται καὶ ὅσῳ ἂν ἀνωτέρω καὶ ὅσῳ ἂν ἰσχυρότερα ᾖ καὶ ἀπὸ ἰσχυροτέρων ὠλισθήκῃ. ἢν δὲ τὸ ὀστέον τὸ τοῦ μηροῦ τὸ πρὸς τοῦ γόνατος ἕλκος ποιησάμενον ἐξολίσθῃ, ἐμβληθὲν μὲν καὶ ἐμμεῖναν, ἔτι βιαιότερον καὶ θᾶσσον τὸν θάνατον ποιήσει τῶν πρόσθεν εἰρημένων·[1] μὴ ἐμβληθὲν δὲ πολὺ κινδυνωδέστερον ἢ τὰ πρόσθεν· ὅμως δὲ μούνῃ ἐλπὶς αὕτη σωτηρίης.

LXVI. Οὗτος δὲ λόγος καὶ περὶ τῶν κατὰ τὸν ἀγκῶνα ἄρθρων, καὶ περὶ τῶν τοῦ πήχεος καὶ βραχίονος· ὅσα γὰρ ἂν τούτων ἐξαρθρήσαντα ἐξίσχῃ ἕλκος ποιησάμενα, πάντα, ἢν ἐμβληθῇ, θάνατον φέρει, μὴ ἐμβληθέντα[2] δέ, ἐλπίδα σωτηρίης· χώλωσις δὲ ἑτοίμη τοῖσι περιγινομένοισιν. θανατωδέστερα δὲ τοῖσιν ἐμβαλλομένοισίν ἐστι τὰ ἀνωτέρω τῶν ἄρθρων, ἀτὰρ καὶ τοῖσι μὴ ἐμβαλλομένοισι κινδυνωδέστερα αὐτὰ ταῦτα. εἰ δέ τινι τὰ ἀνώτατα ἄρθρα ἐξαρθρήσαντα ἕλκος ποιήσαντα ἐξίσχοι, ταῦτα δ' ἂν ἔτι καὶ ἐμβαλλόμενα ταχυθανατώτατα ἂν[3] εἴη καὶ μὴ ἐμβαλλόμενα κινδυνωδέστατα· ἰητρείη δὲ ἤδη εἴρηται οἵη τις ἐμοὶ δοκεῖ ἐπιτηδειοτάτη εἶναι τῶν τοιούτων.

LXVII. Ὅσοισι δὲ ἄρθρα δακτύλων, ἢ ποδὸς ἢ χειρός, ἐξαρθρήσαντα ἕλκος ποιησάμενα

[1] ἢ τὰ πρόσθεν εἰρημένα.

[2] ἐμβαλλόμενα.

[3] Use of double ἂν characteristic. Even a triple ἂν is found (*J.* XLVI). Cf. *Vul. Cap.* IV., *Acut.* I, *Fract.* XXVIII, and (for triple ἂν) Thuc. II. 94.—Pq.

imminent in them too. If you treat it without reduction, this method, and this only, gives hope of recovery. These cases are the more dangerous, the higher the joint is, and the stronger the dislocated parts and those from which they are dislocated. If the thigh-bone at the knee makes a wound and is dislocated through it, when reduced and kept in place it will cause still more prompt and violent death than in the cases mentioned above; when not reduced, there is far more danger than in the former cases, yet this is the only hope of safety.

LXVI. The same remarks apply to the bones forming the elbow-joints, both those of the forearm and upper arm; for if any one of them is dislocated and projects, making a wound, they all bring a fatal issue if reduced; but if not reduced, there is hope of recovery, though those who survive are certain to be maimed. More fatal when reduced are compound dislocations of the more proximal joints; and they too involve greater danger even when unreduced. If anyone has the uppermost joints dislocated and projecting through the wound made, it is there that reduction brings swiftest death; and there too is most danger, even without reduction.[1] The kind of treatment which seems to me most suitable in such cases has already been described.

LXVII. When the joints of the fingers or toes are dislocated and project through a wound, the

[1] These two sentences seem to be of general application, not confined to the elbow—as in Littré's and Petrequin's versions.

ἐξέσχε, μὴ κατεηγότος τοῦ ὀστέου, ἀλλὰ κατ᾽ αὐτὴν τὴν σύμφυσιν ἀποσπασθέντος, τούτοισιν ἦν ἐμβληθέντα ἐμμείνῃ, ἔνι μέν τις κίνδυνος σπασμοῦ, ἢν μὴ χρηστῶς ἰητρεύωνται· ὅμως δέ τι ἄξιον ἐμβάλλειν, προειπόντα ὅτι φυλακῆς πολλῆς καὶ μελέτης δεῖται. ἐμβάλλειν μέντοι ῥηϊδιστον καὶ δυνατώτατον καὶ τεχνικώτατόν ἐστι τῷ μοχλίσκῳ, ὥσπερ καὶ πρόσθεν εἴρηται ἐν τοῖσι καταγνυμένοισι καὶ ἐξίσχουσι ὀστέοισιν· ἔπειτα ἀτρεμεῖν ὡς μάλιστα χρή, καὶ κατακεῖσθαι καὶ ὀλιγοσιτεῖν· ἄμεινον δὲ καὶ φαρμακεῦσαι ἄνω κούφῳ τινὶ φαρμάκῳ, τὸ δὲ ἕλκος ἰητρεύειν[1] μὲν ἢ ἐναίμοισι τοῖσιν ἐπιτέγκτοισι ἢ πολυοφθάλμοισιν ἢ οἷσι κεφαλῆς ὀστέα κατεηγότα ἰητρεύεται, κατάψυχρον δὲ κάρτα μηδὲν προσφέρειν. ἥκιστα μὲν οὖν τὰ πρῶτα ἄρθρα κινδυνώδεά ἐστι, τὰ δὲ ἔτι ἀνωτέρω[2] κινδυνωδέστερα. ἐμβάλλειν δὲ χρὴ αὐθημερὸν ἢ τῇ ὑστεραίῃ, τριταίῳ δὲ καὶ τεταρταίῳ ἥκιστα· τεταρταῖα γὰρ ἐόντα ἐπισημαίνει τῇσι παλιγκοτίῃσι μάλιστα. οἷσιν ἂν οὖν μὴ αὐτίκα ἐγγένηται ἐμβάλλειν, ὑπερβαίνειν χρὴ ταύτας τὰς εἰρημένας ἡμέρας· ὅ τι γὰρ ἂν ἔσω δέκα ἡμερέων ἐμβάλλῃς, σπᾶν καταλιπτέον.[3] ἢν δὲ ἄρα ἐμβεβλημένῳ σπασμὸς ἐπιγένηται, ἐκβάλλειν τὸ ἄρθρον δεῖ ταχύ, καὶ θερμῷ τέγγειν ὡς πλειστάκις, καὶ τὸ ὅλον σῶμα θερμῶς καὶ λιπαρῶς καὶ μαλθακῶς ἔχειν, μάλιστα κατὰ τὰ ἄρθρα· κεκάμφθαι δὲ μᾶλλον ἢ ἐκτετάσθαι πᾶν τὸ σῶμα χρή. προσδέχεσθαι μέντοι χρὴ κατὰ τοὺς δακτύλους τὰ ἄρθρα τὰ ἐμβαλλόμενα ἀποστατικὰ ἔσεσθαι· τὰ γὰρ πλεῖστα οὕτω γίνεται, ἢν καὶ ὁτιοῦν φλεγμονῆς ὑπογένηται, ὡς,

bone being not fractured, but torn away at the connection, in these cases reduction and fixation involve some danger of spasm, if they are not skilfully treated; still, it is worth while to reduce the dislocation, giving warning beforehand as to the necessity for great caution and care. The easiest and most powerful reduction, and that most in accord with art, is that with the small lever, as described before in relation to fractured and protruding bones. Afterwards the patient should keep as quiet as possible, lie down, and take little food. It is rather advantageous to give a mild emetic. Treat the wound either with moist applications for fresh cuts, chamomile,[1] or remedies used for head fractures; but do not apply anything very cold. The distal joints, then, are least dangerous, the higher ones more so. One should make reduction on the first or following day, but not on the third or fourth, since the onset of exacerbations occurs mostly on the fourth day. In cases, then, where immediate reduction fails, one should pass over the aforesaid days. Any case you reduce within ten days is liable to spasm. If spasm supervenes after reduction, one ought to dislocate the joint quickly, make frequent warm affusions, and keep the whole body warmly, comfortably and softly at rest, especially at the joints. The whole body should be rather flexed than extended. In any case one must expect the articular ends of the phalanges to come away after reduction; for this happens in most cases, if there is any amount of inflammation. So, were it not that the surgeon

[1] "Ox-eye." Galen.

[1] θεραπεύειν. [2] τὰ δ' ἐπάνω.
[3] πᾶν καταληπτόν Kw.; κάρτα ἑλπτόν Reinhold.

εἰ μὴ δι' ἀμαθίην τῶν δημοτέων ἐν αἰτίῃ ἔμελλεν ὁ ἰητρὸς ἔσεσθαι, οὐδὲν ἂν πάντως οὐδ' ἐμβάλλειν ἔδει. τὰ μὲν οὖν κατὰ τὰ ἄρθρα ὀστέα ἐξίσχοντα
38 ἐμβαλλόμενα οὕτω κινδυνώδεά ἐστιν, ὡς εἴρηται.

LXVIII. Ὅσα δὲ κατὰ τὰ ἄρθρα τὰ κατὰ τοὺς δακτύλους ἀποκόπτεται τελέως, ταῦτα ἀσινέα τὰ πλεῖστά ἐστιν, εἰ μή τις ἐν αὐτῇ τῇ τρώσει λειποθυμήσας βλαβείη· καὶ ἰητρείη φαύλη ἀρκέσει τῶν τοιούτων ἑλκέων. ἀτὰρ καὶ ὅσα μὴ κατὰ τὰ ἄρθρα, ἀλλὰ κατ' ἄλλην τινὰ ἴξιν τῶν ὀστέων ἀποκόπτεται, καὶ ταῦτα ἀσινέα ἐστί, καὶ ἔτι εὐαλθέστερα τῶν ἑτέρων· καὶ ὅσα κατὰ τοὺς δακτύλους ὀστέα κατεηγότα[1] ἐξίσχει μὴ κατὰ
10 τὸ ἄρθρον, καὶ ταῦτα ἀσινέα ἐστὶν ἐμβαλλόμενα. ἀποκόψιες δὲ τέλειαι ὀστέων καὶ κατὰ τὰ ἄρθρα καὶ ἐν ποδὶ καὶ ἐν χειρὶ καὶ ἐν κνήμῃ, τοῖσι παρὰ τὰ σφυρὰ καὶ ἐν πήχει, τοῖσι παρὰ τοὺς καρπούς, τοῖσι πλείστοισιν ἀποκοπτομένοισιν ἀσινέα γίνεται, ὅσα ἂν μὴ αὐτίκα λειποθυμίη ἀνατρέψῃ ἢ τεταρταίοισιν ἐοῦσι πυρετὸς συνε-
17 χὴς ἐπιγένηται.

LXIX. Ἀποσφακελίσιες μέντοι σαρκῶν, καὶ ἐν τρώμασιν αἱμορρόοισιν γενομένοισιν ἢ ἀποσφίγξεσιν ἰσχυραῖς, καὶ ἐν ὀστέων κατήγμασι γενομένοισι[2] πιεχθεῖσι μᾶλλόν τι τοῦ καιροῦ, καὶ ἐν ἄλλοισι δεσμοῖσι βιαίοισιν, ἀποληφθέντα[3] ἀποπίπτει πολλοῖσι, καὶ οἱ πολλοὶ περιγίνονται τῶν τοιούτων, καὶ οἷσι μηροῦ μέρος τι ἀποπίπτει καὶ τῶν σαρκῶν καὶ τοῦ ὀστέου, καὶ οἷσι βραχίονος, ἧσσον[4] δέ· πήχεός τε καὶ

[1] καταγέντα.
[2] Kw. omits.
[3] ἀπομελανθέντα.
[4] ἡσσόνως.

is likely to incur blame owing to the ignorance of the vulgar, he should by no means make the reduction. The dangers, then, of reducing bones which project through the skin at the joints are such as have been described.[1]

LXVIII. Cases of complete amputation of fingers or toes at the joints are usually without danger—unless a patient suffers from collapse at the time of injury—and ordinary treatment will suffice for such wounds. Again, where the amputation is not at a joint, but somewhere in the line of the bones, these cases also are not dangerous, and heal even more readily than the former; and if the projection of fractured finger-bones is not at a joint, reduction is without danger in these cases also. Complete amputations even at the joints both of the foot and hand, or of the leg at the ankle, and of the forearm at the wrist, are in most cases without danger, unless syncope overcomes them at once, or continuous fever supervenes on the fourth day.[2]

LXIX. As for gangrene of the tissues occurring in wounds with supervening haemorrhage, or much strangulation, and in fractures which undergo greater compression than is opportune, and in other cases of tight bandaging, the intercepted[3] parts come away in many cases. The majority of such patients survive, even when a part of the thigh comes away with the soft parts and the bone, also part of the arm, but these less frequently. When the forearm or leg

[1] Surgeons such as Antyllus and Heliodorus probably performed amputation or resection in these cases. Even Paulus (VI. 121) is surprised at the timidity of Hippocrates.

[2] This chapter seems to refer to cases of injury, not surgical "resection" as Adams.

[3] Or "blackened" (ἀπομελανθέντα, Kw.).

κινήμης ἀποπεσούσης, καὶ ἔτι εὐφορωτέρως περιγίνονται. οἷσι μὲν οὖν κατεαγέντων τῶν ὀστέων ἀποσφίγξιες αὐτίκα ἐγένοντο καὶ μελασμοί, τούτοισι μὲν ταχεῖαι αἱ περιῤῥήξιες γίνονται τοῦ σώματος, καὶ τὰ ἀποπίπτοντα ταχέως ἀποπίπτει, ἤδη τῶν ὀστέων προενδεδωκότων· οἷσι δὲ ὑγιέων ἐόντων τῶν ὀστέων οἱ μελασμοὶ γίνονται, αἱ μὲν σάρκες ταχέως θνήσκουσι καὶ τούτοισι, τὰ δὲ ὀστέα βραδέως ἀφίσταται, ἢ ἂν τὰ ὅρια τοῦ μελασμοῦ γένηται καὶ ἡ ψίλωσις τοῦ ὀστέου. χρὴ δέ, ὅσα ἂν κατωτέρω τοῦ σώματος τῶν ὁρίων τοῦ μελασμοῦ ᾖ, ταῦτα, ὅταν ἤδη πάμπαν τεθνήκῃ καὶ ἀναλγέα ᾖ, ἀφαιρεῖν κατὰ τὸ ἄρθρον, προμηθεόμενον ὅπως μή τι τρώσῃς· ἢν γὰρ ὀδυνηθῇ ἀποταμνόμενος καὶ μήπω κυρήσῃ τὸ σῶμα τεθνεὸς ταύτῃ ᾗ ἀποτέμνεται, κάρτα κίνδυνος ὑπὸ τῆς ὀδύνης λειποθυμῆσαι· αἱ δὲ τοιαῦται λειποθυμίαι πολλοὺς παραχρῆμα ἤδη ἀπώλεσαν. μηροῦ μὲν οὖν ὀστέον, ψιλωθὲν ἐκ τοιούτου τρόπου, ὀγδοηκοσταῖον εἶδον ἐγὼ ἀποστάν· ἡ μέντοι κνήμη τούτῳ τῷ ἀνθρώπῳ κατὰ τὸ γόνυ ἀφῃρέθη εἰκοσταίη, ἐδόκει δέ μοι καὶ ἐγγυτέρω· οὐ γὰρ ἅμα, ἀλλ' ἐπὶ τὸ προμηθέστερον ἔδοξέ μοί τι ποιεῖν.[1] κνήμης δὲ ὀστέα ἐκ τοιούτου μελασμοῦ, μάλα κατὰ μέσην τὴν κνήμην ἐόντα, ἐξηκοσταῖά μοι ἀπέπεσεν, ὅσα ἐψιλώθη αὐτῶν. διενέγκοι μὲν γὰρ ἄν τι καὶ ἰητρείη ἰητρείης ἐς τὸ θᾶσσόν τε καὶ βραδύτερον τὰ ὀστέα ψιλούμενα ἀποπίπτειν· διενέγκοι δ'

[1] Kw. ἐδόκει; omit ἅμα and μοι. Reinhold's emendation: οὐ γὰρ εἶα με . . . ἔταξέ μοι.

comes away, they survive still more easily. Now, in cases of fractured bones, when strangulation sets in at once with lividity, lines of demarcation are rapidly developed on the part, and that which is coming away does so quickly, the bones having already yielded; but in cases where the lividity comes on while the bones are sound, the flesh dies rapidly here also, but the bones separate slowly along the border of the lividity and denudation of the bone. As regards parts of the limb which are below the limit of mortification, when they are quite dead and painless, they should be taken off at the joint, taking care not to wound any live part. For if the patient suffers pain during the amputation, and the limb happens to be not yet dead at the place where it is cut away, there is great risk of collapse from pain; and collapses of this kind have brought sudden death to many. I have seen a thigh-bone, denuded in this way, separate on the eightieth day. The leg in this patient was removed at the knee on the twentieth day, and I thought it might have been done higher up—not all at once, of course—but I resolved to act rather on the safe side.[1] The bones of the leg in a similar case which I had of gangrene just in the middle of the leg came away on the sixtieth day, so far as they were denuded. One or another kind of treatment would make a great difference in the rapidity or slowness with which the denuded bones come away. So too pressure, if

[1] Seems to be the sense of a very obscure passage. "Sooner" gives best sense, but is a curious meaning for ἐγγυτέρω. "Too early, for it appeared to me that this should be done more guardedly" (Adams, Littré) does violence to the text. Galen apparently understood "higher up"; for he says H. means that it is safer to amputate at a joint.

ἄν τι καὶ πίεξις πιέξιος καὶ ἐπὶ τὸ ἰσχυρότερόν τε καὶ ἀσθενέστερον, καὶ ἐς τὸ θᾶσσόν τε καὶ βραδύτερον ἀπομελανθέντα ἀποθανεῖν τὰ νεῦρα καὶ τὰς σάρκας καὶ τὰς ἀρτηρίας καὶ τὰς φλέβας· ἐπεὶ ὅσα μὴ ἰσχυρῶς ἀποληφθέντων θνήσκει, ἔνια τῶν τοιούτων οὐκ ἀφικνεῖται ἐς ὀστέων ψιλώματα, ἀλλ' ἐπιπολαιότερα ἐκπίπτει· ἔνια δὲ οὐδὲ ἐς νεύρων ψιλώματα ἀφικνεῖται, ἀλλ' ἐπιπολαιότερα ἐκπίπτει. διὰ οὖν ταύτας τὰς εἰρημένας προφάσιας οὐκ ἔστιν ἓν οὔνομα ἀριθμοῦ τῷ χρόνῳ θέσθαι, ἐν ὁπόσῳ ἕκαστα τούτων κρίνεται.

Προσδέχεσθαι δὲ μάλα χρὴ τοιαῦτα ἰήματα· ἐσιδεῖν γὰρ φοβερώτερά ἐστίν τινι ἢ ἰητρεύειν· καὶ ἰητρείη πραείη ἀρκεῖ πᾶσι τοιούτοισιν· αὐτὰ γὰρ ἑωυτὰ κρίνει μοῦνον. τῆς δὲ διαίτης ἐπιμελεῖσθαι χρὴ ὡς κατὰ δύναμιν ἀπύρετος ᾖ, καὶ ἐν σχήμασι δικαίοισι εὐθετίζειν τὸ σῶμα· δίκαια δὲ ταῦτα μηδὲ μετέωρον ποιεῖν, μηδὲ ἐς τὸ κάτω ῥέπον, ἀλλὰ μᾶλλον ἐς τὸ ἄνω, ποτὶ καὶ ἔστ' ἂν τελέως περιῤῥαγῇ· αἱμορῥαγιέων γὰρ ἐν τούτῳ τῷ χρόνῳ κίνδυνος· διὰ τοῦτο οὖν οὐ χρὴ κατάῤῥοπα τὰ τρώματα ποιεῖν, ἀλλὰ τἀναντία. ἐπεὶ ὅταν γε χρόνος ἐγγένηται πλείων καὶ καθαρὰ τὰ ἕλκεα γένηται, οὐκ ἔτι τὰ αὐτὰ[1] σχήματα ἐπιτήδειά ἐστιν, ἀλλ' ἡ εὐθεῖα θέσις, καὶ ἐνίοτε ἐπὶ τὸ κατάῤῥοπον ῥέποντα· ἀνὰ χρόνον γὰρ ἐνίοισι τούτων ἀποστάσιες πύου γίνονται, καὶ ὑποδεσμίδων δέονται. προσδέχεσθαι δὲ χρὴ τοὺς τοιούτους ἀνὰ χρόνον ὑπὸ δυσεντερίης πιέζεσθαι· καὶ γὰρ ἐπὶ τοῖσι μελαινομένοισι, τοῖσι πλείστοισιν ἐπιγίνεται δυσεντερίη, καὶ ἐπὶ

stronger or weaker, would make a difference in the rapidity or slowness of the blackening and mortification of the ligaments, flesh, arteries and veins. For where the parts perish without great strangulation, the denudation sometimes does not extend to the bones, but the more superficial tissues are thrown off; sometimes the denudation does not even extend to the ligaments, but the more superficial parts are thrown off. For the said reasons, then, one cannot fix on one definite time in which each of these cases is determined.

One should be quite ready to treat such cases, for they are more formidable to look at than to cure; and mild treatment is sufficient, for they determine their own process. One must be careful as to diet, so that the patient may be, so far as possible, without fever, and place the limb in a correct attitude. Correct attitudes are neither elevated nor sloping downwards, but rather upwards, especially before the line of demarcation is fully developed; for there is danger of haemorrhage in this period. Wherefore do not keep the injured part dependent, but the reverse. When a considerable time has elapsed, and the wounds are cleansed, the suitable attitude is no longer the same as before, but the horizontal position, and sometimes one sloping downwards; for in time purulent collections form in some of these cases, and they require under-bandages.[1] One must expect such patients to be troubled, after a time, with dysentery; for dysentery supervenes in most cases

[1] See Introduction.

[1] ταῦτα.

τῇσιν αἱμορῥαγίῃσιν[1] ἐξ ἑλκέων· ἐπιγίνεται δὲ ὡς ἐπὶ τὸ πολὺ κεκριμένων ἤδη τῶν μελασμῶν καὶ τῆς αἱμορῥαγίης, καὶ ὁρμᾶται μὲν λαύρως καὶ ἰσχυρῶς· ἀτὰρ οὔτε πολυήμερος γίνεται οὔτε θανατώδης· οὔτε γὰρ μάλα ἀπόσιτοι γίνονται οἱ τοιοῦτοι, οὔτε ἄλλως συμφέρει
76 κενεαγγεῖν.

LXX. Μηροῦ δὲ ὀλίσθημα κατ' ἰσχίον ὧδε χρὴ ἐμβάλλειν, ἢν ἐς τὸ ἔσω μέρος ὠλισθήκῃ· ἀγαθὴ μὲν ἥδε καὶ δικαίη καὶ κατὰ φύσιν ἡ ἐμβολή, καὶ δή τι καὶ ἀγωνιστικὸν ἔχουσα, ὅστις γε τοῖσι τοιούτοισιν ἥδεται κομψευόμενος. κρεμάσαι χρὴ τὸν ἄνθρωπον τῶν ποδῶν πρὸς μεσόδμην δεσμῷ δυνατῷ μέν, μαλθακῷ δὲ καὶ πλάτος ἔχοντι· τοὺς δὲ πόδας διέχειν χρὴ ὅσον τέσσαρας δακτύλους ἀπ' ἀλλήλων, ἢ καὶ ἔλασ-
10 σον· χρὴ δὲ καὶ ἐπάνωθεν τῶν ἐπιγουνίδων προσπεριβεβλῆσθαι πλατεῖ ἱμάντι καὶ μαλθακῷ, ἀνατείνοντι ἐς[2] τὴν μεσόδμην· τὸ δὲ σκέλος τὸ σιναρὸν ἐντετάσθαι χρὴ ὡς δύο δακτύλους μᾶλλον τοῦ ἑτέρου· ἀπὸ τῆς γῆς τὴν κεφαλὴν ἀπεχέτω ὡς δύο πήχεας, ἢ ὀλίγῳ πλέον ἢ ἔλασσον· τὰς δὲ χεῖρας παρατεταμένας παρὰ τὰς πλευρὰς προσδεδεμένος ἔστω μαλθακῷ τινί· πάντα δὲ ταῦτα ὑπτίῳ κατακειμένῳ κατασκευασθήτω, ὡς ὅτι ἐλάχιστον χρόνον κρέμηται. ὅταν δὲ κρε-
20 μασθῇ, ἄνδρα χρὴ εὐπαίδευτον καὶ μὴ ἀσθενέα, ἐνείραντα τὸν πῆχυν μεσηγὺ τῶν μηρῶν, εἶτα θέσθαι τὸν πῆχυν μεσηγὺ τοῦ τε περιναίου καὶ τῆς κεφαλῆς τοῦ μηροῦ τῆς ἐξεστηκυίης, ἔπειτα συνάψαντα τὴν ἑτέρην χεῖρα πρὸς τὴν διῃρμένην, παραστάντα ὀρθὸν παρὰ τὸ σῶμα τοῦ κρεμα-

of mortification, and in haemorrhage from wounds. It comes on as a rule when the mortification or haemorrhage has been determined, and is copious and violent at the start, but neither lasts long nor is dangerous to life. The patients in such cases do not lose their appetite much, nor is there any advantage in a restricted diet.

LXX. Dislocation of the thigh at the hip should be reduced as follows, if it is dislocated inwards. It is a good and correct method, and in accord with nature, and one too that has something striking about it, which pleases a dilettante in such matters. One should suspend the patient by his feet from a cross-beam with a band, strong, but soft, and of good breadth. The feet should be about four fingers apart, or even less. He should also be bound round above the knee-caps with a broad, soft band stretching up to the beam; and the injured leg should be extended about two fingers' breadth further than the other. Let the head be about two cubits, more or less, from the ground. The patient should have his arms extended along the sides and fastened with something soft. Let all these preparations be made while he is lying on his back, that the period of suspension may be as short as possible. When he is suspended, let an assistant who is skilful and no weakling insert his forearm between the patient's thighs, and bring it down between the perineum and the head of the dislocated bone. Then, clasping the inserted hand with the other, while standing erect beside the suspended patient, let him suddenly

[1] τοῖσι αἱμορῥαγήσασιν.
[2] πρὸς.

μένου, ἐξαπίνης ἐκκρεμασθέντα μετέωρον αἰωρηθῆναι ὡς ἰσορροπώτατον. αὕτη δὲ ἡ ἐμβολὴ παρέχεται πάντα ὅσα χρὴ κατὰ φύσιν· αὐτό τε γὰρ τὸ σῶμα κρεμάμενον τῷ ἑωυτοῦ βάρει κατά-
39 τασιν ποιεῖται, ὅ τε ἐκκρεμασθεὶς ἅμα μὲν τῇ κατατάσει ἀναγκάζει ὑπεραιωρεῖσθαι τὴν κεφαλὴν τοῦ μηροῦ ὑπὲρ τῆς κοτύλης, ἅμα δὲ τῷ ὀστέῳ τοῦ πήχεος ἀπομοχλεύει καὶ ἀναγκάζει ἐς τὴν ἀρχαίην φύσιν ὀλισθάνειν. χρὴ δὲ παγκάλως μὲν τοῖσι δεσμοῖσιν ἐσκευάσθαι, φρονέοντα δὲ καὶ ὡς ἰσχυρότατον[1] τὸν ἐξαιω-
37 ρούμενον εἶναι.

LXXI. Ὡς μὲν οὖν καὶ πρόσθεν εἴρηται, μέγα τὸ διαφέρον ἐστὶ τῶν φυσίων τοῖσι ἀνθρώποισιν ἐς τὸ εὐέμβλητα εἶναι καὶ δυσέμβλητα [τὰ ἄρθρα]·[2] καὶ διότι μέγα διαφέρει, εἴρηται πρόσθεν ἐν τοῖσι περὶ ὤμου. ἐνίοισι γὰρ ὁ μηρὸς ἐμπίπτει ἀπ' οὐδεμιῆς παρασκευῆς, ἀλλ' ὀλίγης μὲν κατατάσιος, ὅσον τῇσι χερσὶ κατιθῦναι, βραχείης δὲ κιγκλίσιος· πολλοῖσι δὲ συγκάμψασι τὸ σκέλος κατὰ τὸ ἄρθρον ἐνέπεσεν, ἤδη ἀμφίσφαλ-
10 σιν ποιησάμενον. ἀλλὰ γὰρ τὰ πολὺ πλείω οὐκ ἐνακούει τῆς τυχούσης παρασκευῆς· διὰ τοῦτο ἐπίστασθαι μὲν χρὴ τὰ κράτιστα περὶ ἑκάστου ἐν πάσῃ τῇ τέχνῃ· χρῆσθαι δὲ οἷσιν ἂν δόξῃ ἑκάστοτε. εἴρηνται μὲν οὖν τρόποι κατατασίων καὶ ἐν τοῖσιν ἔμπροσθεν γεγραμμένοισιν, ὥστε χρῆσθαι τούτων ὅστις ἂν παρατύχῃ. δεῖ γὰρ

[1] According to Littré and Petrequin, the patient is meant; but Littré emends to ἐχυρώτατον. The καὶ favours reference to the assistant; as in the Latin interpreters and Ermerins.

[2] Omit Galen, Littré.

suspend himself from him, and keep himself in the air as evenly balanced as possible. This mode of reduction provides everything requisite according to nature, for the body itself when suspended makes extension by its own weight; the assistant who is suspended, while making extension, forces the head of the bone to a position above the socket, and at the same time levers it out with the bone of his forearm, and makes it slip into its old natural place. But the bandages must be perfectly arranged, and care taken that the suspended assistant is the strongest available.[1]

LXXI. Now, as was said before, there is a great difference in the constitution of individuals, as regards ease and difficulty in reducing their dislocated joints; and the reason of this great difference was given before in the part about the shoulder. Thus in some, the thigh is put in without any apparatus, by the aid of slight extension, such as can be managed with the hands, and a little jerking; while in many, flexion of the leg at the joint and making a movement of circumduction is found to reduce it. But the great majority do not yield to ordinary apparatus; wherefore one should know the most powerful methods which the whole art provides for each case, and use them severally where they seem appropriate. Now methods of extension have been described in previous chapters, so that one may use any one of them which happens to be available.[2]

[1] Pq. renders, "the patient very strongly suspended," so also Littré; but there are surely two injunctions. Adams, "the person suspended along with the patient [should] have a sufficiently strong hold." Littré's ἐχυρώτατον applied to the assistant.

[2] Cf. VII.

ἀντικατατετάσθαι ἰσχυρῶς, ἐπὶ θάτερα μὲν τοῦ σκέλεος, ἐπὶ θάτερα δὲ τοῦ σώματος· ἢν γὰρ εὖ καταταθῇ, ὑπεραιωρηθήσεται ἡ κεφαλὴ τοῦ μηροῦ ὑπὲρ τῆς ἀρχαίης ἕδρης· καὶ ἢν μὲν ὑπεραιωρηθῇ οὕτως, οὐδὲ κωλῦσαι ἔτι ῥηΐδιον ἵζεσθαι αὐτὴν ἐς τὴν ἑωυτῆς ἕδρην, ὥστε ἤδη πᾶσα ἀρκεῖ μόχλευσίς τε καὶ κατόρθωσις· ἀλλὰ γὰρ ἐλλείπουσιν ἐν τῇ κατατάσει· διὰ τοῦτο ὄχλον πλείω παρέχει ἡ ἐμβολή. χρὴ οὖν[1] οὐ μοῦνον παρὰ τὸν πόδα τὰ δεσμὰ ἐξηρτῆσθαι, ἀλλὰ καὶ ἄνωθεν τοῦ γούνατος, ὅπως[2] μὴ κατὰ τὸ τοῦ γούνατος ἄρθρον ἐν τῇ τανύσει ἡ ἐπίδοσις[3] ᾖ μᾶλλον ἢ κατὰ τὸ τοῦ ἰσχίου ἄρθρον. οὕτω μὲν οὖν χρὴ τὴν κατάτασιν τὴν πρὸς τὸ τοῦ ποδὸς μέρος ἐσκευάσθαι· ἀτὰρ καὶ τὴν ἐπὶ θάτερα κατάτασιν, μὴ μοῦνον ἐκ τῆς περὶ τὸ στῆθος καὶ τὰς μασχάλας περιβολῆς ἀντιτείνεσθαι, ἀλλὰ καὶ ἱμάντι μακρῷ, διπτύχῳ, ἰσχυρῷ, προσηνεῖ, παρὰ τὸν περίναιον βεβλημένῳ, παρατεταμένῳ, ἐπὶ μὲν τὰ ὄπισθεν παρὰ τὴν ῥάχιν, ἐπὶ δὲ τὰ ἔμπροσθεν παρὰ τὴν κληῖδα, προσηρτημένῳ πρὸς τὴν ἀρχὴν τὴν ἀντικατατείνουσαν, οὕτω διαναγκάζεσθαι, τοῖσι μὲν ἔνθα διατειναμένοισι, τοῖσι δὲ ἔνθα, ὅπως δὲ ὁ ἱμὰς ὁ παρὰ τὸν περίναιον μὴ περὶ τὴν κεφαλὴν τοῦ μηροῦ παρατεταμένος ἔσται, ἀλλὰ μεσηγὺ τῆς κεφαλῆς καὶ τοῦ περιναίου, ἐν δὲ τῇ κατατάσει κατὰ μὲν τὴν κεφαλὴν τοῦ μηροῦ ἐρείσας τὴν πυγμὴν ἐς τὸ ἔξω ὠθείτω. ἢν δὲ μετεωρίζηται ἑλκόμενος, διέρσας τὴν χεῖρα καὶ ἐπισυνάψας τῇ ἑτέρῃ χειρὶ ἅμα συγκατατεινέτω, ἅμα δὲ ἐς τὸ ἔξω συναναγκαζέτω· ἄλλος δέ τις τὸ παρὰ τὸ γόνυ τοῦ μηροῦ ἡσύχως ἐς τὸ ἔσω μέρος κατορθούτω.

There must be strong extension both ways, of the leg in one direction, and of the body in the other; for if good extension is made, the head of the thigh-bone will be lifted over its old seat, and when so brought up, it becomes difficult even to prevent it from settling into its position, so that any leverage and adjustment suffices; but it is in extension that operators fail, and that is why the reduction gives more trouble. One should attach the bands, not only at the foot, but also above the knee, so that, in stretching, the giving way may not occur at the knee-joint rather than at the hip. This then is how the extension towards the foot end should be arranged; but there should be also counter-extension in the other direction, not only from a band round the chest and under the armpits, but also from a long double strap, strong and soft, passed round the perineum and stretched behind along the spine, and in front by the collar-bone attached to the source of the counter-extension. With the cords so arranged, some are stretched in one direction, some in the other, taking care that the strap at the perineum is not stretched over the head of the thigh-bone but between it and the perineum. During extension, let the fist be pressed against the head of the thigh-bone and thrust it outwards. If the pulling lifts up the patient, insert one hand between the thighs and, clasping it with the other, combine extension with pressure outwards. Let another person make adjustment by pushing the knee end of the bone gently inwards.

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[1] δὲ. [2] ἵνα.

[3] ἐπίδεσις Littré, Petrequin, and codd., except B. ἐπίδοσις B, Erm., Kw.

LXXII. Εἴρηται δὲ καὶ πρόσθεν ἤδη ὅτι ἐπάξιον, ὅστις ἐν πόλει πολυανθρώπῳ ἰητρεύει, ξύλον κεκτῆσθαι τετράγωνον ὡς ἑξάπηχυ, ἢ ὀλίγῳ μέζον, εὖρος δὲ ὡς δίπηχυ, πάχος δὲ ἀρκεῖ σπιθαμαιῖον· ἔπειτα κατὰ μῆκος μὲν ἔνθεν καὶ ἔνθεν ἐντομὴν ἔχειν χρή, ὡς μὴ ὑψηλοτέρη τοῦ καιροῦ ἡ μηχάνησις ᾖ· ἔπειτα φλιὰς βραχείας, ἰσχυρὰς καὶ ἰσχυρῶς ἐνηρμοσμένας, ὀνίσκον ἔχειν ἑκατέρωθεν· ἔπειτα ἀρκεῖ μὲν ἐν τῷ ἡμίσει τοῦ ξύλου—οὐδὲν δὲ κωλύει καὶ διὰ παντός—ἐντετμῆσθαι ὡς καπέτους μακρὰς πέντε ἢ ἕξ, διαλειπούσας ἀπ' ἀλλήλων ὡς τέσσαρας δακτύλους, αὐτὰς δὲ ἀρκεῖ εὖρος τριδακτύλους εἶναι καὶ βάθος οὕτως. ἔχειν δὲ κατὰ μέσον τὸ ξύλον καὶ καταγλυφὴν χρὴ βαθυτέρην, ἐπὶ τετράγωνον, ὡς τριῶν δακτύλων· καὶ ἐς μὲν τὴν καταγλυφὴν ταύτην, ὅταν δοκῇ προσδεῖν, ξύλον ἐμπηγνύναι ἐνάρμοζον τῇ καταγλυφῇ, τὸ δὲ ἄνω στρογγύλον· ἐμπηγνύναι δέ, ἐπήν ποτε δοκῇ συμφέρειν, μεσηγὺ τοῦ περιναίου καὶ τῆς κεφαλῆς τοῦ μηροῦ. τοῦτο τὸ ξύλον ἑστεὸς κωλύει τὴν ἐπίδοσιν ἐπιδιδόναι τὸ σῶμα τοῖσι πρὸς ποδῶν ἕλκουσιν· ἐνίοτε γὰρ ἀρκεῖ αὐτὸ τὸ ξύλον τοῦτο ἀντὶ τῆς ἄνωθεν ἀντικατατάσιος· ἐνίοτε δὲ καὶ κατατεινομένου τοῦ σκέλεος ἔνθεν καὶ ἔνθεν, αὐτὸ τὸ ξύλον τοῦτο, χαλαρὸν ἐγκείμενον ἢ τῇ ἢ τῇ, ἐκμοχλεύειν ἐπιτήδειον ἂν εἴη τὴν κεφαλὴν τοῦ μηροῦ ἐς τὸ ἔξω μέρος. διὰ τοῦτο γὰρ καὶ αἱ κάπετοι ἐντετμέαται, ὡς καθ' ὁποίην ἂν αὐτέων ἁρμόσῃ, ἐμβαλλόμενος ξύλινος μοχλὸς μοχλεύοι, ἢ παρὰ τὰς κεφαλὰς τῶν ἄρθρων, ἢ κατὰ κεφαλὰς τελέως ἐρειδόμενος ἅμα τῇ κατατάσει, ἤν τε ἐς τὸ ἔξω μέρος συμφέρῃ

LXXII. It was said before [1] that it is worth while for one who practises in a populous city to get a quadrangular plank, six cubits long or rather more, and about two cubits broad; while for thickness a span is sufficient. Next, it should have an incision at either end of the long sides, that the mechanism may not be higher than is suitable.[2] Then let there be short strong supports, firmly fitted in, and having a windlass at each end. It suffices, next, to cut out five or six long grooves about four fingers' breadth apart; it will be enough if they are three fingers broad and the same in depth, occupying half the plank, though there is no objection to their extending the whole length. The plank should also have a deeper hole cut out in the middle, about three fingers' breadth square; and into this hole insert, when requisite, a post, fitted to it, but rounded in the upper part. Insert it, whenever it seems useful, between the perineum and the head of the thigh-bone. This post, when fixed, prevents the body from yielding when traction is made towards the feet; in fact, sometimes the post of itself is a substitute for counter extension upwards. Sometimes also, when the leg is extended in both directions, this same post, so placed as to have free play to either side, would be suitable for levering the head of the thigh-bone outwards. It is for this purpose, too, that the grooves are cut, that a wooden lever may be inserted into whichever may suit, and brought to bear either at the side of the joint-heads or right upon them, making pressure simultaneously with the extension, whether the leverage is required

[1] *Fract.* XIII. The *Scamnum* or "Bench" of Hippocrates.
[2] *I.e.* the supports should be "let in," not fixed on the top.

ἐκμοχλεύεσθαι, ἤν τε ἐς τὸ ἔσω, καὶ ἤν τε στρογγύλον τὸν μοχλὸν συμφέρῃ εἶναι, ἤν τε πλάτος ἔχοντα· ἄλλος γὰρ ἄλλῳ τῶν ἄρθρων ἁρμόζει. εὔχρηστος δέ ἐστιν ἐπὶ πάντων τῶν ἄρθρων ἐμβολῆς τῶν κατὰ τὰ σκέλεα αὕτη ἡ μόχλευσις σὺν τῇ κατατάσει. περὶ οὗ οὖν ὁ λόγος ἐστί, στρογγύλος ἁρμόζει ὁ μοχλὸς εἶναι· τῷ μέντοι ἔξω ἐκπεπτωκότι ἄρθρῳ πλατὺς ἁρμόσει εἶναι. ἀπὸ τούτων τῶν μηχανέων καὶ ἀναγκέων οὐδὲν ἄρθροι μοι δοκεῖ οἷόν τε εἶναι ἀπορηθῆναι ἐμπεσεῖν.

LXXIII. Εὕροι δ' ἄν τις καὶ ἄλλους τρόπους τούτου τοῦ ἄρθρου ἐμβολῆς· εἰ γὰρ τὸ ξύλον τὸ μέγα τοῦτο ἔχοι κατὰ μέσον καὶ ἐκ πλαγίων φλιὰς δύο ὡς ποδιαίας,[1] ὕψος δὲ ὅπως ἂν δοκέοι συμφέρειν, τὴν μὲν ἔνθεν, τὴν δὲ ἔνθεν· ἔπειτα ξύλον πλάγιον ἐνείη ἐν τῇσι φλιῇσιν ὡς κλιμακτήρ, ἔπειτα διέρσαι[2] τὸ ὑγιὲς σκέλος μεσηγὺ τῶν φλιέων, τὸ δὲ σιναρὸν ἄνωθεν τοῦ κλιμακτῆρος ἔχειν[3] ἐνάρμοζον ἀπαρτὶ πρὸς τὸ ὕψος καὶ πρὸς τὸ ἄρθρον, ᾗ ἐκπέπτωκεν· ῥηΐδιον δὲ [χρὴ][4] ἁρμόζειν· τὸν γὰρ κλιμακτῆρα ὑψηλότερόν τινι χρὴ ποιεῖν τοῦ μετρίου, καὶ ἱμάτιον πολύπτυχον, ὡς ἂν ἁρμόσῃ, ὑποτείνειν ὑπὸ τὸ σῶμα. ἔπειτα χρὴ ξύλον ἔχον τὸ πλάτος μέτριον, καὶ μῆκος ἄχρι τοῦ σφυροῦ ὑποτεταμένον, ὑπὸ τὸ σκέλος εἶναι, ἱκνεύμενον ἐπέκεινα τῆς κεφαλῆς τοῦ μηροῦ

[1] *ποδὸς μῆκος* Paulus VI. 118.
[2] *εἰ διέρσειεν* Kw., *ἐρείσειε* Apoll. [3] *ἔχοι.* [4] Omit.

outwards or inwards, and whether the lever should be rounded or broad, for one form suits one joint, another another. This leverage, combined with extension, is very efficacious in all reductions of the leg-joints. As regards our present subject, it is proper that the lever be rounded; but for an external dislocation of the joint, a flat one will be suitable. It seems to me that no joint is incapable of reduction with these mechanical forces.

LXXIII. One might find other ways of reducing this joint. This big plank might have two props at the middle and to the sides,[1] about a foot long —height as may seem suitable—one on one side, the other on the other; then a crossbar of wood should be inserted in the props like a ladder-step. One might then insert[2] the sound leg between the props, and have the injured one on the top of the bar, fitting exactly to its height and to the joint where it is dislocated. This is easily arranged; for the crossbar should be put somewhat higher than is sufficient, and a folded garment spread under the patient, so that it fits. Then a piece of wood of suitable breadth and of a length sufficient to reach to the ankle should be extended under the leg, going up as far as possible beyond the head of the thigh-

[1] These props seem to have been removable and at the sides of the hole for the perineal post, which was κατὰ μέσον; not fixtures at the sides of the "bench," as usually figured. See the description in Paulus (VI 118). The wooden crosspiece must have been either very thick or much shorter than three feet, to stand the pressure required. It could be put either at the top, when the whole resembled the letter pi, or lower down, when it resembled ēta (H). This also shows that the arrangement was not very wide.

[2] διέρασεν surely implies that the props were not far apart.

ὡς οἷόν τε· προσκαταδεδέσθαι δὲ χρὴ πρὸς τὸ σκέλος, ὅπως ἂν μετρίως ἔχῃ. κἄπειτα κατατεινομένου τοῦ σκέλεος, εἴτε ξύλῳ ὑπεροειδεῖ, εἴτε τοίτων τινὶ τῶν κατατασίων, ὁμοῦ χρὴ καταναγκάζεσθαι τὸ σκέλος περὶ τὸν κλιμακτῆρα ἐς τὸ κάτω μέρος σὺν τῷ ξύλῳ τῷ προσδεδεμένῳ· τὸν δέ τινα κατέχειν τὸν ἄνθρωπον ἀνωτέρω τοῦ ἄρθρου κατὰ τὸ ἰσχίον. καὶ γὰρ οὕτως ἅμα μὲν ἡ κατάτασις ὑπεραίροιτο[1] τὴν κεφαλὴν τοῦ μηροῦ ὑπὲρ τῆς κοτύλης, ἅμα δὲ ἡ μόχλευσις ἀπωθέοι τὴν κεφαλὴν τοῦ μηροῦ ἐς τὴν ἀρχαίην φύσιν. αὗται πᾶσαι αἱ εἰρημέναι ἀνάγκαι ἰσχυραὶ καὶ πᾶσαι κρέσσους τῆς συμφορῆς, ἤν τις ὀρθῶς καὶ καλῶς σκευάζῃ.[2] ὥσπερ δὲ καὶ πρόσθεν ἤδη εἴρηται, πολύ τι ἀπὸ ἀσθενεστέρων κατατασίων καὶ φαυλοτέρης κατασκευῆς τοῖσι πλείοσιν[3] ἐμπίπτει.

LXXIV. Ἢν δὲ ἐς τὸ ἔξω κεφαλὴ μηροῦ ὀλίσθῃ, τὰς μὲν κατατάσιας ἔνθα καὶ ἔνθα οὕτω χρὴ ποιεῖσθαι ὥσπερ εἴρηται, ἢ τοιουτοτρόπως· τὴν δὲ μόχλευσιν πλάτος ἔχοντι μοχλῷ μοχλεύειν χρὴ ἅμα τῇ κατατάσει, ἐκ τοῦ ἔξω μέρους ἐς τὸ ἔσω ἀναγκάζοντα, κατά γε αὐτὸν τὸν γλουτὸν τιθέμενον τὸν μοχλὸν καὶ ὀλίγῳ ἀνωτέρω· ἐπὶ τὸ ὑγιὲς ἰσχίον κατὰ τὸν γλουτὸν ἀντιστηριζέτω τις τῇσι χερσὶν ὡς μὴ ὑπείκῃ τὸ σῶμα, ἢ ἑτέρῳ τινὶ τοιούτῳ μοχλῷ ὑποβάλλων καὶ ἐρείσας, ἐκ[4] τῶν καπέτων τὴν ἁρμόζουσαν ἀντικατεχέτω· τοῦ δὲ μηροῦ τοῦ ἐξηρθρηκότος τὸ παρὰ τὸ γόνυ ἔσωθεν ἔξω παραγέτω ἡσύχως. ἡ δὲ κρέμασις οὐχ

[1] ὑπεραιωρέοι ἂν.

bone; it should be attached to the leg in a suitable manner. Then, while the leg is being extended either by a pestle-shaped rod or any of the above modes of extension, one should simultaneously force the leg with the wood attached to it downwards over the crossbar; while an assistant holds down the patient at the hip above the joint. For thus the extension will raise the head of the thigh-bone over its socket, while the leverage will thrust it back into its natural place.[1] All these forcible methods of reduction are strong, and all are able to overcome the lesion, if one makes a proper and good application of them; but, as was said before, in the majority of cases the joint is put in with much weaker extensions and more ordinary apparatus.

LXXIV. When a thigh-bone head slips outwards, extension should be made in both directions as described, or in similar fashion. The leverage should be done with a broad lever simultaneously with the extension, forcing it from without inwards, the lever being applied to the buttock itself and a little above it. Let someone give counter-support to the hip on the sound side at the buttock with his hands, that the body may not yield, or make counter-pressure by slipping a similar lever under the joint, using a suitable groove as fulcrum. Let the bone of the dislocated thigh be gently brought from within outwards at the knee. The suspension method will

[1] An imitation of the method of reducing the shoulder-joint (VII).

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[2] *κευάζηται*, as Apollonius. [3] *πλείστοισιν*.
[4] *ἐς* for *ἐκ* Kw., following Erm.'s conjecture.

ἁρμόσει τούτῳ τῷ τρόπῳ τῆς ὀλισθήσιος τοῦ ἄρθρου· ὁ γὰρ πῆχυς τοῦ ἐκκρεμαμένου ἀπωθέοι [1] ἂν τὴν κεφαλὴν τοῦ μηροῦ ἀπὸ τῆς κοτύλης. τὴν μέντοι σὺν τῷ ξύλῳ τῷ ὑποτεινομένῳ μόχλευσιν μηχανήσαιτ' ἄν τις ὥστε ἁρμόζειν καὶ τούτῳ τῷ τρόπῳ τοῦ ὀλισθήματος, ἔξωθεν προσαρτέων. ἀλλὰ τί καὶ δεῖ [πλείω λέγειν]; [2] ἢν γὰρ ὀρθῶς μὲν καὶ εὖ κατατείνηται, ὀρθῶς δὲ μοχλεύηται, τί οὐκ ἂν ἐμπέσοι ἄρθρον οὕτως ἐκπεπτωκός;

LXXV. Ἢν δὲ ἐς τοὔπισθεν μέρος ἐκπεπτώκῃ ὁ μηρός, τὰς μὲν κατατάσιας καὶ ἀντιτάσιας οὕτω δεῖ ποιεῖσθαι, καθάπερ [3] εἴρηται· ἐπιστορέσαντα δὲ ἐπὶ τὸ ξύλον ἱμάτιον πολύπτυχον, ὡς μαλακώτατον ᾖ, πρηνέα κατακλίναντα τὸν ἄνθρωπον, οὕτω κατατείνειν· ἅμα δὲ τῇ κατατάσει χρὴ τῇ σανίδι καταναγκάζειν τὸν αὐτὸν τρόπον ὡς τὰ ὑβώματα, κατ' ἴξιν τοῦ πυγαίου ποιησάμενον τὴν σανίδα, καὶ μᾶλλον ἐς τὸ κάτω μέρος ἢ ἐς τὸ ἄνω τῶν ἰσχίων· καὶ ἡ ἐντομὴ ἡ ἐν τῷ τοίχῳ τῇ σανίδι μὴ εὐθεῖα ἔστω, ἀλλ' ὀλίγον καταφερὴς πρὸς τὸ τῶν ποδῶν μέρος. αὕτη ἡ ἐμβολὴ κατὰ φύσιν τε μάλιστα τῷ τρόπῳ τούτῳ τοῦ ὀλισθήματός ἐστι καὶ ἅμα ἰσχυροτάτη. ἀρκέσειε δ' ἂν ἴσως ἀντὶ τῆς σανίδος καὶ ἐφεζόμενόν τινα, ἢ τῇσι χερσὶν ἐρεισάμενον ἢ ἐπίβαντα ἐξαπίνης ὁμοίως ἐπαιωρηθῆναι ἅμα τῇ κατατάσει. ἄλλη δὲ οὐδεμίη ἐμβολὴ τῶν πρόσθεν εἰρημένων κατὰ φύσιν ἐστὶ τῷ τρόπῳ τούτῳ τοῦ ὀλισθήματος.

LXXVI. Ἢν δὲ ἐς τὸ ἔμπροσθεν ὀλίσθῃ, τῶν μὲν κατατασίων ὁ αὐτὸς τρόπος ποιητέος· ἄνδρα δὲ χρὴ ὡς ἰσχυρότατον ἀπὸ τῶν χειρῶν καὶ ὡς εὐπαιδευτότατον, ἐνερείσαντα τὸ θέναρ τῆς χειρὸς

not suit this form of dislocation, for the forearm of the person who hangs himself on would push the head of the thigh-bone away from its socket; but one might arrange the leverage with the board attached so as to suit this form of dislocation also, fitting it to the outside. But what need is there [to say more]? For if the extension is correct and good, and the leverage correct, what dislocation of this kind would not be reduced?

LXXV. If the thigh is dislocated backwards, extension and counter-extension should be made in the way described. Spreading a folded cloak on the plank, so that it may be as soft as possible, with the patient lying prone, one should make extension thus, and simultaneously make downward pressure with the plank, as in cases of hump-back, putting the board in a line with the buttock, and rather below than above the hip. Let the groove in the wall for the board be not level, but sloping a little down towards the feet. This mode of reduction is most naturally in accord with this form of dislocation, and at the same time very powerful. Instead of the board it would, perhaps, suffice for someone to sit on the part, or make pressure with his hands or with the foot, in each case bringing his weight suddenly to bear at the moment of extension. None of the other modes of reduction mentioned above is in natural conformity with this dislocation.

LXXVI. In dislocation forwards, the same extensions are to be used; and the strongest-handed and best-trained assistant available should make pressure

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[1] ἀπωθοίη. [2] Omit Kw. and a few MSS. [3] ὡς.

τῆς ἑτέρης παρὰ τὸν βουβῶνα, καὶ τῇ ἑτέρῃ χειρὶ τὴν ἑωυτοῦ χεῖρα προσκαταλαβόντα, ἅμα μὲν ἐς τὸ κάτω ὠθεῖν τὸ ὀλίσθημα, ἅμα δὲ ἐς τὸ ἔμπροσθεν τοῦ γόνατος μέρος. οὗτος γὰρ ὁ τρόπος τῆς ἐμβολῆς μάλιστα κατὰ φύσιν τούτῳ τῷ ὀλισθήματί ἐστιν. ἀτὰρ καὶ ὁ κρεμασμὸς ἐγγύς τι τοῦ κατὰ φύσιν· δεῖ μέντοι τὸν ἐκκρεμάμενον ἔμπειρον εἶναι, ὡς μὴ ἐκμοχλεύῃ τῷ πήχει τὸ ἄρθρον, ἀλλὰ περὶ μέσον τὸν περίναιον καὶ κατὰ τὸ ἱερὸν ὀστέον τὴν ἐκκρέμασιν ποίηται.

LXXVII. Εὐδοκιμεῖ δὲ δὴ καὶ [ὁ πειραθεὶς][1] ἀσκῷ τοῦτο τὸ ἄρθρον ἐμβάλλεσθαι· καὶ ἤδη μέν τινας εἶδον οἵτινες ὑπὸ φαυλότητος καὶ τὰ ἔξω ἐκκεκλιμένα καὶ τὰ ὄπισθεν ἀσκῷ ἐπειρῶντο ἐμβάλλειν, οὐ γιγνώσκοντες ὅτι ἐξέβαλλον αὐτὸ μᾶλλον ἢ ἐνέβαλλον· ὁ μέντοι πρῶτος ἐπινοήσας δῆλον ὅτι πρὸς τὰ ἔσω ὠλισθηκότα ἀσκῷ ἐμβάλλειν ἐπειρήσατο. ἐπίστασθαι μὲν οὖν χρὴ ὡς χρηστέον ἀσκῷ, εἰ δέοι χρῆσθαι· διαγινώσκειν δὲ χρὴ[2] ὅτι ἕτερα πολλὰ ἀσκοῦ κρέσσω ἐστίν. χρὴ δὲ τὸν μὲν ἀσκὸν καταθεῖναι[3] ἐς τοὺς μηροὺς ἀφύσητον ἐόντα, ὡς ἂν δύναιτο ἀνωτάτω πρὸς τὸν περίναιον ἀνάγοντα· ἀπὸ δὲ τῶν ἐπιγουνίδων ἀρξάμενον, ταινίῃ πρὸς ἀλλήλους τοὺς μηροὺς καταδῆσαι ἄχρι τοῦ ἡμίσεος τῶν μηρῶν· ἔπειτα ἐς ἕνα τῶν ποδῶν,[4] τὸν λελυμένον, ἐνθέντα αὐλὸν ἐκ χαλκείου, φῦσαν ἐσαναγκάζειν ἐς τὸν ἀσκόν· τὸν δὲ ἄνθρωπον πλάγιον κατακεῖσθαι, τὸ σιναρὸν σκέλος ἐπιπολῆς ἔχοντα. ἡ μὲν οὖν παρασκευὴ αὕτη

[1] Omit Kw. and most MSS. [2] δεῖ.

at the groin with the palm of one hand, grasping it with the other, and pushing the dislocated part downwards, while at the same time the part at the knee is brought forwards.[1] This mode of reduction is in most natural accord with this dislocation. For the rest, suspension rather approaches the natural method; but the man who hangs himself on must be experienced, so as not to lever out the joint with his arm, but make the suspension weight act at the middle of the perineum, and over the sacrum.

LXXVII. Finally, there is an approved method of reducing this joint also with a bag;[2] and I have seen some who, through incompetence, kept trying to reduce even external and posterior dislocations with a bag, not knowing that they were putting it out rather than putting it in. The first inventor of the method, however, obviously used the bag in trying to reduce inward dislocations. One ought, therefore, to know how to use it, if required, while bearing in mind that many other methods are more effective. The bag should be applied to the thighs uninflated, and brought up as close as possible to the perineum. Bind the thighs to one another with a band extending from above the knee-caps half-way up the thighs; then, inserting a brass tube into one of the feet[3] which has been untied, force air into the bag. The patient should lie on his side with the injured leg on top. This, then, is the arrangement;

[1] In the "Apollonius" illustration he makes pressure with one hand on top of the other.

[2] *I.e.* wine-skin. Cf. use for spine (XLVII).

[3] Of the wine-skin.

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[3] ἐνθεῖναι. [4] ποδεώνων Weber, Kw.

ἐστίν· σκευάζονται δὲ κάκιον οἱ πλεῖστοι ἢ ὡς ἐγὼ εἴρηκα· οὐ γὰρ καταδέουσι τοὺς μηροὺς ἐπὶ συχνόν, ἀλλὰ μοῦνον τὰ γόνατα, οὐδὲ κατατείνουσι· χρὴ δὲ καὶ προσκατατείνειν· ὅμως δὲ ἤδη τινὲς ἐνέβαλον ῥηϊδίου πρήγματος ἐπιτυχόντες. εὐφόρως δὲ οὐ πάνυ ἔχει διαναγκάζεσθαι οὕτως· ὅ τε γὰρ ἀσκὸς ἐμφυσώμενος οὐ τὰ ὀγκηρότατα αὐτοῦ ἔχει πρὸς τῷ ἄρθρῳ τῆς κεφαλῆς, ἣν δεῖ μάλιστα ἐκμοχλεύσασθαι, ἀλλὰ καθ' ἑωυτὸν αὐτὸς μέσος καὶ τῶν μηρῶν ἴσως ἢ κατὰ τὸ μέσον ἢ ἔτι κατωτέρω· οἵ τε αὖ μηροὶ φύσει γαυσοὶ πεφύκασιν, ἄνωθεν γὰρ σαρκώδεές τε καὶ σύμμηροι, ἐς δὲ τὸ κάτω ὑπόξηροι, ὥστε καὶ ἡ τῶν μηρῶν φύσις ἐπαναγκάζει τὸν ἀσκὸν ἀπὸ τοῦ ἐπικαιροτάτου χωρίου. εἴ τε οὖν τις σμικρὸν ἐνθήσει τὸν ἀσκόν, σμικρὴ ἡ ἰσχὺς ἐοῦσα ἀδύνατος ἔσται ἀναγκάζειν τὸ ἄρθρον. εἰ δὲ δεῖ ἀσκῷ χρῆσθαι, ἐπὶ πολὺ οἱ μηροὶ συνδετέοι πρὸς ἀλλήλους, καὶ ἅμα τῇ κατατάσει τοῦ σώματος ὁ ἀσκὸς φυσητέος· τὰ δὲ σκέλεα ἀμφότερα ὁμοῦ καὶ καταδεῖν ἐν τούτῳ τῷ τρόπῳ τῆς ἐμβολῆς ἐπὶ τὴν τελευτήν.

LXXVIII. Χρὴ δὲ περὶ πλείστου μὲν ποιεῖσθαι ἐν πάσῃ τῇ τέχνῃ ὅπως ὑγιέα ποιήσῃς τὸν νοσέοντα· εἰ δὲ πολλοῖσι τρόποισι οἷόν τε εἴῃ ὑγιέα ποιεῖν, τὸν ἀοχλότατον χρὴ αἱρεῖσθαι· καὶ γὰρ ἀνδραγαθικώτερον τοῦτο καὶ τεχνικώτερον, ὅστις μὴ ἐπιθυμεῖ δημοειδέος κιβδηλίης. περὶ οὗ οὖν ὁ λόγος ἐστί, τοιαίδε ἄν τινες κατοικίδιοι κατατάσιες εἶεν τοῦ σώματος, ὥστε ἐκ τῶν παρεόντων τὸ εὔπορον εὑρίσκειν· τοῦτο μὲν εἰ τὰ δεσμὰ τὰ ἱμάντινα μὴ παρείη τὰ

but most operators make less suitable preparation than that which I have described. They do not fasten the thighs together over a good space, but only at the knees; nor do they make extension, though there should be extension as well. Still, some are found to have made reduction, chancing upon an easy case But the forcible separation is by no means lightly accomplished thus; for the inflated bag does not present its largest part at the articular head of the bone, which it is especially requisite to get levered out, but at its own middle, and perhaps at the middle of the thighs, or still lower down. The thighs, too, have a natural curve; for at the top they are fleshy and close together, but taper off downwards, so that the natural disposition of the thighs also forces the bag away from the most opportune place. If one inserts a small bag, its power being small, it will be unable to reduce the joint. So, if one must use a bag, the thighs are to be bound together over a large space, and the bag inflated simultaneously with the extension of the body; also tie both legs together at their extremity, in this form of reduction.

LXXVIII. What you should put first in all the practice of our art is how to make the patient well; and if he can be made well in many ways, one should choose the least troublesome. This is more honourable and more in accord with the art for anyone who is not covetous of the false coin of popular advertisement. To return to our subject—there are certain homely means of making extension, such as might readily be found among things at hand. First, supposing no soft supple leather holdfasts are

μαλθακὰ καὶ προσηνέα, ἀλλ' ἢ σιδήρεα[1] ἢ ὅπλα ἢ σχοινία, ταινίῃσι χρὴ ἢ ἐκρήγμασι τρυχίων ἐρινέων περιελίσσειν ταύτῃ μάλιστα ᾗ μέλλει τὰ δεσμὰ καθέξειν, καὶ ἔτι ἐπὶ πλέον· ἔπειτα οὕτω δεῖν τοῖσι δεσμοῖσιν· τοῦτο δέ, ἐπὶ κλίνης χρὴ ἥτις ἰσχυροτάτη καὶ μεγίστη τῶν παρεουσέων κατατετάσθαι καλῶς τὸν ἄνθρωπον· τῆς δὲ κλίνης τοὺς πόδας, ἢ τοὺς πρὸς κεφαλῆς ἢ τοὺς πρὸς ποδῶν, ἐρηρεῖσθαι πρὸς τὸν οὐδόν, εἴ τε ἔξωθεν συμφέρει, εἴ τε ἔσωθεν· παρὰ δὲ τοὺς ἑτέρους πόδας παρεμβεβλῆσθαι ξύλον τετράγωνον πλάγιον, διῆκον ἀπὸ τοῦ ποδὸς πρὸς τὸν πόδα, καὶ ἦν μὲν λεπτὸν ᾖ τὸ ξύλον, προσδεδέσθω πρὸς τοὺς πόδας τῆς κλίνης, ἢν δὲ παχὺ ᾖ, μηδέν·[2] ἔπειτα τὰς ἀρχὰς χρὴ τῶν δεσμῶν καὶ τῶν πρὸς τῆς κεφαλῆς καὶ τῶν πρὸς τῶν ποδῶν προσδῆσαι ἑκατέρας πρὸς ὕπερον ἢ πρὸς ἄλλο τι τοιοῦτον· ὁ δὲ δεσμὸς ἐχέτω ἰθυωρίην κατὰ τὸ σῶμα ἢ καὶ ὀλίγῳ ἀνωτέρω, συμμέτρως δὲ ἐκτετάσθω πρὸς τὰ ὕπερα, ὡς, ὀρθὰ ἑστεῶτα, τὸ μὲν παρὰ τὸν οὐδὸν ἐρείδηται, τὸ δὲ παρὰ τὸ ξύλον τὸ παραβεβλημένον· κἄπειτα οὕτω τὰ ὕπερα ἀνακλῶντα χρὴ τὴν κατάτασιν ποιεῖν. ἀρκεῖ δὲ καὶ κλῖμαξ ἰσχυροὺς ἔχουσα τοὺς κλιμακτῆρας, ὑποτεταμένη ὑπὸ τὴν κλίνην, ἀντὶ τοῦ οὐδοῦ τε καὶ ξύλου τοῦ παρατεταμένου, ὡς τὰ ὕπερα, πρὸς τῶν κλιμακτήρων τοὺς ἁρμόζοντας ἔνθεν καὶ ἔνθεν προσερηρεισμένα, ἀνακλώμενα, οὕτω τὴν κατάτασιν ποιῆται τῶν δεσμῶν.

Ἐμβάλλεται δὲ μηροῦ ἄρθρον καὶ τόνδε τὸν

[1] σειραὶ.

available, one might still wrap up iron chains, ship's tackle, or cords, in scarves, or torn woollen rags, especially at the part where they are fastened on, and somewhat further, and then proceed to bind them on as holdfasts. Again, one should use a bed, the strongest and largest available, for making good extension;[1] the legs of the bed either at the head or foot should press against the threshold, outside or inside, as is opportune, and a quadrangular plank should be laid crosswise against the other legs, reaching from one to the other. If the plank is thin, let it be fastened to the legs of the bed; but if thick, this is unnecessary. Next, one should tie the ends of the bands, both those at the head and those at the feet respectively, to a pestle, or some other such piece of wood. Let the bands be in line with the body, or slanting a little upwards, and evenly stretched to the pestles, so that, when they are vertical, one is pressed against the threshold, the other against the plank laid across; and then one should make the extension by drawing back the pestles thus arranged. A ladder with strong crossbars stretched under the bed is a good substitute for the threshold and cross-beam, so arranged that the pestles may get their fulera at either end against suitable crossbars, and, when drawn back, may thus make extension on the bands

The thigh-joint is also reduced in the following

[1] Littré and Petrequin render *κατατετάσθαι* simply "coucher"; but the word is used throughout for surgical "extension." Adams: "the patient should be comfortably laid."

[2] *οὐ δεῖ* (Kw.'s conjecture from *οὐδὲν* of BMV).

τρόπον, ἢν ἐς τὸ ἔσω ὠλισθήκῃ καὶ ἐς τὸ ἔμπροσθεν· κλίμακα γὰρ χρὴ κατορύξαντα ἐπικαθίσαι τὸν ἄνθρωπον, ἔπειτα τὸ μὲν ὑγιὲς σκέλος ἡσύχως κατατείναντα προσδῆσαι, ὅπου ἂν ἁρμόσῃ· ἐκ δὲ τοῦ σιναροῦ ἐς κεράμιον ὕδωρ ἐγχέας ἐκκρεμάσαι, ἢ ἐς σφυρίδα λίθους ἐμβαλών. ἕτερος τρόπος ἐμβολῆς, ἢν ἐς τὸ ἔσω ὠλισθήκῃ· στρωτῆρα χρὴ καταδῆσαι μεταξὺ δύω στύλων ὕψος ἔχοντα σύμμετρον· προεχέτω δὲ τοῦ στρωτῆρος κατὰ τὸ ἓν μέρος ὁπόσον τὸ πυγαῖον·[1] περιδήσας δὲ περὶ τὸ στῆθος τοῦ ἀνθρώπου ἱμάτιον, ἐπικαθίσαι τὸν ἄνθρωπον ἐπὶ τὸ προέχον τοῦ στρωτῆρος· εἶτα προσλαβεῖν τὸ στῆθος πρὸς τὸν στῦλον πλατεῖ τινί· ἔπειτα τὸ μὲν ὑγιὲς σκέλος κατεχέτω τις, ὡς μὴ περισφάλληται· ἐκ δὲ τοῦ σιναροῦ ἐκκρεμάσαι βάρος, ὅσον ἂν ἁρμόζῃ, ὡς καὶ πρόσθεν ἤδη εἴρηται.

LXXIX. Πρῶτον μὲν οὖν δεῖ εἰδέναι ὅτι πάντων τῶν ὀστέων αἱ συμβολαί εἰσιν ὡς ἐπὶ πολὺ ἡ κεφαλὴ καὶ ἡ κοτύλη· ἐφ' ὧν δὲ καὶ ἡ χώρα κοτυλοειδὴς καὶ ἐπίμακρος· ἔνιαι δὲ τῶν χωρέων γληνοειδέες εἰσίν. ἀεὶ δὲ ἐμβάλλειν δεῖ πάντα τὰ ἐκπίπτοντα ἄρθρα, μάλιστα μὲν εὐθὺς παραχρῆμα ἔτι θερμῶν ἐόντων· εἰ δὲ μή, ὡς τάχιστα· καὶ γὰρ τῷ ἐμβάλλοντι ῥηΐτερον καὶ θᾶσσόν ἐστιν ἐμβάλλειν, καὶ τῷ ἀσθενέοντι πολὺ ἀπονωτέρη ἡ ἐμβολὴ ἡ πρὶν διοιδεῖν ἐστίν. δεῖ δὲ

[1] πηχυαῖον Littré; πυγμαῖον Pq.; πυγαῖον vulg., Kw.

manner, if it is dislocated inwards or forwards. One should fix a ladder in the ground, and seat the patient upon it; then, gently extending the sound leg, fasten it at a suitable point, and from the injured limb suspend a jar and pour in water, or a basket and put in stones. Another way of reducing it, if dislocated inwards :— Fasten a crossbar between two props at a moderate height, and let one end of it project a buttock's length.[1] After passing a cloak round the patient's chest, seat him on the projecting crossbar, and then fasten his chest to the upright with a broad band. Let an assistant hold the sound leg, to prevent him from slipping round, and hang a suitable weight from the injured one, as has already been described.[2]

LXXIX. One must know, to begin with, that the connections between all bones are as a rule the head and the socket. In some, the cavity is large and cup-shaped; but in others, the cavities are shallowly concave. One must always reduce any dislocated joint, preferably at once, and while the parts are still warm; failing that, as soon as possible, for reduction before swelling sets in is accomplished much more easily and quickly by the operator, and is much less painful for the patient. When you are

[1] "What a measure!" says Petrequin, and suggests *πυγμαῖον*. Littré reads *πηχυαῖον*, "a cubit." The reading of the MSS. is supported by Apollonius (both text and illustration), though it is hard to see why the patient should not sit between the posts.

[2] According to Galen, the treatise ended here. The rest is a sort of appendix of fragments, some of them (*e.g.* LXXX) perhaps genuine parts which were lost and subsequently rediscovered. Most is from *Mochlicon*, as explained in the Introduction.

ἀεὶ παντα τὰ ἄρθρα, ὁπόταν μέλλῃς ἐμβάλλειν, προαναμαλάξαι καὶ διακιγκλίσαι· ῥᾷον γὰρ ἐθέλει ἐμβάλλεσθαι. παρὰ πάσας δὲ τὰς τῶν ἄρθρων ἐμβολὰς ἰσχναίνειν δεῖ τὸν ἄνθρωπον, μάλιστα μὲν περὶ τὰ μέγιστα ἄρθρα καὶ χαλεπώτατα ἐμβάλλεσθαι, ἥκιστα δὲ περὶ τὰ ἐλάχιστα
17 καὶ ῥηϊδια.

LXXX. Δακτύλων δὲ ἢν ἐκπεσῃ ἄρθρον τι τῶν τῆς χειρός, ἤν τε τὸ πρῶτον, ἤν τε τὸ δεύτερον, ἤν τε τὸ τρίτον, οὑτὸς [καὶ ἴσος][1] τρόπος τῆς ἐμβολῆς· χαλεπώτερα μέντοι ἀεὶ τὰ μέγιστα τῶν ἄρθρων ἐμβάλλειν. ἐκπίπτει δὲ κατὰ τέσσαρας τρόπους, ἢ ἄνω ἢ κάτω ἢ ἐς τὸ πλάγιον ἑκατέρωθεν, μάλιστα μὲν ἐς τὸ ἄνω, ἥκιστα δὲ ἐς τὰ πλάγια, ἐν τῷ σφόδρα κινεῖσθαι. ἑκατέρωθεν δὲ τῆς χώρης, οὗ ἐκβέβηκεν, ὥσπερ ἄμβη ἐστίν. ἢν μὲν οὖν ἐς τὸ
10 ἄνω ἐκπέσῃ ἢ ἐς τὸ κάτω διὰ τὸ λειοτέρην εἶναι ταύτην τὴν χώρην, ἢ ἐκ τῶν πλαγίων, καὶ ἅμα μικρῆς ἐούσης τῆς ὑπερβάσιος, ἢν μεταστῇ τὸ ἄρθρον, ῥηϊδίον ἐστιν ἐμβάλλειν. τρόπος δὲ τῆς ἐμβολῆς ὅδε· περιελίξαι τὸν δάκτυλον ἄκρον ἢ ἐπιδέσματί τινι ἢ ἄλλῳ τρόπῳ τοιούτῳ τινί, ὅπως, ὁπόταν κατατείνῃς ἄκρου λαβόμενος, μὴ ἀπολισθάνῃ· ὅταν δὲ περιελίξῃς, τὸν μέν τινα διαλαβέσθαι ἄνωθεν τοῦ καρποῦ τῆς χειρός, τὸν δὲ τοῦ κατειλημμένου·[2] ἔπειτα κατατείνειν πρὸς
20 ἑωυτὸν ἀμφοτέρους εὖ μάλα, καὶ ἅμα ἀπῶσαι τὸ ἐξεστηκὸς ἄρθρον ἐς τὴν χώρην. ἢν δὲ ἐς τὰ πλάγια ἐκπέσῃ, τῆς μὲν κατατάσιος οὑτὸς τρόπος· ὅταν δὲ δὴ δοκῇ σοι ὑπερβεβηκέναι τὴν γραμμήν,[3] ἅμα χρὴ κατατείναντας ἀπῶσαι ἐς τὴν χώρην εὐθύς, ἕτερον δέ τινα ἐκ τοῦ ἑτέρου

going to put in any joint, you must always first make it supple and move it about, for it will thus be more easily reduced. In all cases of reduction, the patient must be put on restricted diet, especially when the joints are very large and very difficult to put in, and least so when they are very small and easy.

LXXX. If any of the finger-joints, whether first, second, or third, is dislocated, the mode of reduction is identically the same, though the largest joints are always the hardest to put in. Dislocation takes place in four ways, up or down [1] or to either side; chiefly upwards, most rarely to the sides, in some violent movement. On each side of the part whence it is displaced there is a sort of rim. Thus, if the displacement is upwards or downwards, it is easier to reduce, because this part is smoother than that at the sides, and the obstacle to get over is small, if the joint is dislocated. The mode of reduction is as follows:—Wrap a bandage or something of the kind round the end of the finger, in such a way that it will not slip off when you grasp the end and make extension. When it is applied, let one person take hold of the wrist from above, the other of the part wrapped up. Next, let each make vigorous extension in his own direction, and at the same time push back the projecting joint into place. In case of lateral dislocation, the mode of extension is the same. When you think it has passed over the line of the joint, push it at once into place, while keeping up the extension; an assistant should keep guard over

[1] Or "backwards" or "forwards."

[1] Omit B, Kw. [2] κατειλυμένου Weber.
[3] ἄμβην (Kw.'s conjecture).

μέρεος τοῦ δακτύλου φυλίσσειν καὶ ἀνωθεῖν, ὅπως μὴ πάλιν ἐκεῖθεν ἀπολίσθῃ. ἐμβάλλουσι δὲ ἐπιεικέως καὶ αἱ σαῦραι αἱ ἐκ τῶν φοινίκων πλεκόμεναι, ἢν κατατείνῃς ἔνθεν καὶ ἔνθεν τὸν
30 δάκτυλον, λαβόμενος τῇ μὲν ἑτέρῃ τῆς σαύρης, τῇ δὲ ἑτέρῃ τοῦ καρποῦ τῆς χειρός. ὅταν δὲ ἐμβάλλῃς, ἐπιδεῖν δεῖ ὀθονίοισιν ὡς τάχιστα, λεπτοτάτοισι κεκηρωμένοισι κηρωτῇ μήτε λίην μαλακῇ μήτε λίην σκληρῇ, ἀλλὰ μετρίως ἐχούσῃ. ἡ μὲν γὰρ σκληρὴ ἀφέστηκεν ἀπὸ τοῦ δακτύλου, ἡ δὲ ἁπαλὴ καὶ ὑγρὴ διατήκεται καὶ ἀπόλλυται, θερμαινομένου τοῦ δακτύλου. λύειν δὲ ἄρθρον δακτύλου τριταῖον ἢ τεταρταῖον· τὸ δὲ ὅλον, ἢν μὲν φλεγμήνῃ, πυκνότερον λύειν, ἢν δὲ μή, ἀραιό-
40 τερον· κατὰ πάντων δὲ τῶν ἄρθρων ταῦτα λέγω. καθίσταται δὲ τοῦ δακτύλου τὸ ἄρθρον τεσ-
43 σαρεσκαιδεκαταῖον. ὁ αὐτὸς δέ ἐστι θεραπείης τρόπος δακτύλων χειρός τε καὶ ποδός.

LXXXI. Παρὰ πάσας δὲ τὰς τῶν ἄρθρων ἐμβολὰς δεῖ ἰσχναίνειν καὶ λιμαγχονεῖν καὶ ἄχρι ἑβδόμης· καὶ εἰ φλεγμαίνοι, πυκνότερον λύειν, εἰ δὲ μή, ἀραιότερον· ἡσυχίην δὲ δεῖ ἔχειν ἀεὶ τὸ πόνεον ἄρθρον, καὶ ὡς κάλλιστα
6 ἐσχηματισμένον κεῖσθαι.

LXXXII. Γόνυ δὲ εὐηθέστερον ἀγκῶνος διὰ τὴν εὐσταλίην καὶ τὴν εὐφυίην, διὸ καὶ ἐκπίπτει καὶ ἐμπίπτει ῥᾷον· ἐκπίπτει δὲ πλειστάκις ἔσω, ἀτὰρ καὶ ἔξω καὶ ὄπισθεν. ἐμβολαὶ δέ, ἐκ τοῦ

the other side of the finger and make counter-pressure, to prevent another dislocation to that side. The "lizards" [1] woven out of palm tissue are satisfactory means of reduction, if you make extension of the finger both ways, grasping the "lizard" at one end and the wrist at the other. After reduction you must apply at once very light bandages soaked in cerate, neither too soft nor too hard, but of medium consistency; for the hard gets detached from the finger, while the soft and moist is melted and disappears as the finger gets warm. Change the dressing of a finger-joint on the third or fourth day; in general, if there is inflammation, change it oftener; if not, more rarely. I apply this rule to all joints. A finger-joint is healed in fourteen days. The mode of treatment is the same for fingers and toes.

LXXXI.[2] In all reductions of joints, the patient should have attenuating and starvation diet up to the seventh day; if there is inflammation, change the dressing oftener; if not, more rarely. The injured joint should be kept always at rest, and be placed in the best possible attitude.

LXXXII.[3] The knee is more favourable for treatment than the elbow, because of its compact and regular form, whence it is both dislocated and reduced more easily. It is most often dislocated inwards, but also externally and backwards. Modes

[1] Hollow cylinders of plaited material which contract on being pulled out. Once a well-known toy. Also mentioned by Diocles, who calls them "the lizards which the children plait." Aristotle (*P.A.* IV. 9) calls them πλεγμάτια, and compares them with the suckers of cuttle fish.

[2] An insertion repeated from §§ LXXIX (end) and LXXX.

[3] From *Fract.* XXXVIII and *Mochl.* XXVI

συγκεκάμφθαι ἢ ἐκλακτίσαι ὀξέως, ἢ συνελίξας ταινίης ὄγκον, ἐν τῇ ἰγνύῃ θείς, ἀμφὶ τοῦτον ἐξαίφνης ἐς ὄκλασιν ἀφιέναι τὸ σῶμα. δύναται δὲ καὶ κατατεινόμενον μετρίως, ὥσπερ ἀγκών, ἐμπίπτειν τὰ ὄπισθεν· τὰ δὲ ἔνθα καὶ ἔνθα, ἐκ τοῦ συγκεκάμφθαι ἢ ἐκλακτίσαι, ἀτὰρ καὶ ἐκ κατατάσιος μετρίης. ἡ διόρθωσις ἅπασι κοινή. ἢν δὲ μὴ ἐμπέσῃ τοῖσι μὲν ὄπισθεν, συγκάμπτειν οὐ δύνανται, ἀτὰρ οὐδὲ τοῖσι ἄλλοισι πάνυ. μινύθει δὲ μηροῦ καὶ κνήμης τοὔμπροσθεν· ἢν δὲ ἐς τὸ ἔσω, βλαισότεροι, μινύθει δὲ τὰ ἔξω. ἢν δὲ ἐς τὸ ἔξω, γαυσότεροι, χωλοὶ δὲ ἧσσον· κατὰ γὰρ τὸ παχύτερον ὀστέον ὀχεῖ, μινύθει δὲ τὰ ἔσω. ἐκ γενεῆς δὲ καὶ ἐν αὐξήσει κατὰ λόγον τὸν πρόσθεν.

LXXXIII. *Τὰ δὲ κατὰ τὰ σφυρὰ κατατάσιος ἰσχυρῆς δεῖται, ἢ τῇσι χερσὶν ἢ ἄλλοισι τοιούτοισι,*[1] *κατορθώσιος δὲ ἅμα ἀμφότερα ποιεούσης· κοινὸν δὲ τοῦτο ἅπασιν.*

LXXXIV. *Τὰ δὲ ἐν ποδὶ ὡς καὶ τὰ ἐν χειρὶ ὑγιέες.*[2]

LXXXV. *Τὰ δὲ τῆς κνήμης συγκοινωνέοντα καὶ ἐκπεσόντα*[3] *ἐκ γενεῆς, ἢ καὶ ἐν αὐξήσει ἐξαρθρήσαντα, ταὐτὰ ἃ καὶ ἐν χειρί.*

LXXXVI. *Ὁκόσοι δὲ πηδήσαντες ἄνωθεν*

[1] τοῖσι. [2] ὑγιῆ *Mochl.*
[3] μὴ ἐμπεσόντα *Mochl.*

of reduction: by flexion or a sharp kick upwards [1] (? jerking the leg upwards), or placing a rolled bandage in the ham, on which the patient brings the weight of his body by crouching suddenly. Suitable extension can reduce backward dislocations, as with the elbow. Those to one or the other side are put in by flexion or leg-jerking, and also by suitable extension. Adjustment [2] is the same for all. If there is no reduction, in posterior cases patients cannot flex the limb, but they can hardly do so in the others; there is atrophy of the thigh and leg in front. If inwards, they are more knock-kneed, and there is atrophy of the outer side; if outwards, they are more bandy, but not so lame, for the weight comes on the larger bone; the inner side atrophies. Cases which occur congenitally or during adolescence follow the rule given above.

LXXXIII.[3] Dislocations at the ankle require strong extension, either with the hands or other such means, and a rectification involving the two [4] combined. This is common to all.

LXXXIV. Dislocations in the foot heal in the same way as those in the hand.

LXXXV. The bones connecting the foot with the leg, whether dislocated from birth or put out during adolescence, follow the same course as those in the hand.

LXXXVI. Those who in leaping from a height

[1] In Hippocrates *Coacae Prenotiones* 108 it is applied to involuntary "jerking of the legs."

[2] The slight variation in *Mochl.* XXVI seems to favour Pq.'s rendering. "This (*i.e.* extension) is common to all cases."

[3] Partly repeated in § LXXXVII.

[4] Extension and counter-extension? Extension and adjustment? It seems an obscure summary of *Fract.* XIII.

ἐστηρίξαντο τῇ πτέρνῃ, ὥστε διαστῆναι τὰ ὀστέα καὶ φλέβας ἐκχυμωθῆναι καὶ νεῦρα ἀμφιφλασθῆναι, ὁπόταν γένηται οἷα τὰ δεινά, κίνδυνος μὲν σφακελίσαντα τὸν αἰῶνα πρήγματα παρασχεῖν· ῥοιώδη μὲν τὰ ὀστέα, τὰ δὲ νεῦρα ἀλλήλοισι κοινωνέοντα. ἐπεὶ καὶ οἷσιν ἂν μάλιστα καταγεῖσιν ἢ ὑπὸ τρώματος ἢ ἐν κνήμῃ ἢ ἐν μηρῷ, ἢ νεύρων ἀπολυθέντων ἃ κοινωνεῖ τούτων, ἢ ἐκ κατακλίσιος ἀμελέος, ἐμελάνθη ἡ πτέρνη, καὶ τούτοισι τὰ παλιγκοτέοντα ἐκ τῶν τοιούτων. ἔστιν ὅτε καὶ πρὸς τῷ σφακελισμῷ γίνονται πυρετοὶ ὀξέες λυγμωδέες, γνώμης ἀπτόμενοι, ταχυθάνατοι, καὶ ἔτι φλεβῶν αἱμορροιέων πελιώσιες. σημεῖα δὲ τῶν παλιγκοτησάντων, ἢν τὰ ἐκχυμώματα καὶ τὰ μελάσματα καὶ τὰ περὶ ταῦτα ὑπόσκληρα καὶ ὑπέρυθρα·[1] ἢν δὲ σὺν σκληρύσματι πελιδνωθῇ, κίνδυνος μελανθῆναι· ἢν δὲ ὑποπέλια ᾖ, ἢ καὶ πέλια μάλα καὶ ἐκχυμώμενα,[2] ἢ ὑπόχλωρα καὶ μαλακά, ταῦτα ἐπὶ πᾶσι τοῖσι τοιούτοισιν ἀγαθά. ἴησις, ἢν μὲν ἀπύρετος ᾖ, ἑλλέβορον· ἢν δὲ μή, μή· ἀλλὰ ποτὸν ὀξύγλυκυ, εἰ δέοι. ἐπίδεσις δὲ ἄρθρων· ἐπὶ δὲ πάντα, μᾶλλον τοῖσι φλάσμασιν, ὀθονίοισι πλείοσι καὶ μαλθακωτέροισιν· πίεξις ἧσσον· προσπεριβάλλειν δὲ τὰ πλεῖστα τῇ πτέρνῃ. τὸ σχῆμα, ὅπερ ἡ ἐπίδεσις, ὡς μὴ ἐς τὴν πτέρνην ἀποπιέζηται· νάρθηξι δὲ μὴ χρῆσθαι.

LXXXVII. Οἷσι δ' ἂν ἐκβῇ ὁ πους ἢ αὐτὸς ἢ σὺν τῇ ἐπιφύσει, ἐκπίπτει μὲν μᾶλλον ἐς τὸ ἔσω· ἢν δὲ μὴ ἐμπέσῃ, λεπτύνεται ἀνὰ χρόνον

[1] ὑπέρυθρα ᾖ *Mochl.*

come down on the heel, so that the bones are separated, and there is extravasation of blood and contusion of ligaments—when grave injuries such as these occur, there is danger of necrosis and life-long trouble; for the bones slip easily, and the ligaments are in connection with one another. Further, when in cases of fracture especially, or a wound either of leg or thigh, or when the ligaments joining up with these parts are torn away, or from carelessness as to position in bed, mortification of the heel has set in, in these patients also such causes give rise to exacerbations. Sometimes acute fevers follow the necrosis, with hiccoughs, affecting the mind and rapidly fatal; there are also lividities from haemorrhage. Signs of exacerbation are ecchymoses, blackenings of the skin with some induration and redness of the surrounding parts. If the lividity is accompanied with hardness, there is danger of mortification; but if the part is sublivid or even very livid after ecchymosis, or greenish yellow and soft, these are good signs in all such cases. Treatment: if there is no fever, hellebore, otherwise not, but let him drink oxymel, if required. Bandaging: that used for joints; over all, especially in contusions, use plenty of soft bandages; pressure, rather slight; additional bandaging, especially round the heel. Attitude: the same object as in bandaging, so as to avoid pressure on the heel. Do not use splints.

LXXXVII. In cases where the foot is dislocated, either by itself or with the epiphysis, it is usually displaced inwards; and if not reduced, the hip,

[2] ἐκκεχυμωμένα.

τό τε ἰσχίον καὶ ὁ μηρός, καὶ κνήμης τὸ ἀντίον
τοῦ ὀλισθήματος. ἐμβολὴ δὲ ἄλλη,[1] ὥσπερ
καρποῦ, κατάτασις δὲ ἰσχυρή· ἴησις δέ, νόμος
ἄρθρων. παλιγκοτεῖ, ἧσσον δὲ καρποῦ, ἢν
ἡσυχάσωσιν. δίαιτα μείων· ἐλινύουσι. τὸ δὲ
9 ἐκ γενεῆς ἢ ἐν αὐξήσει, κατὰ λόγον τὸν πρότερον.

[1] δὲ ἄλλη omit *Mochl.* and translators, except Pq.

thigh and leg become in time attenuated on the side opposed to the dislocation. Reduction in other respects as for the wrist; but strong extension is required. Treatment: that customary for joints. Exacerbation occurs, but less than in wrist cases, if the patients keep at rest. Diet more reduced; they do no work. Congenital and adolescent cases follow the rule given before.[1]

[1] See notes on these chapters in *Mochlicon*, pp. 425–429.