

XXIV.

STUDIES IN ANCIENT INDIAN MEDICINE.

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IV.¹—THE COMPOSITION OF THE CARAKA SAMHITA, AND THE LITERARY METHODS OF THE ANCIENT INDIAN MEDICAL WRITERS. (*A study in textual criticism.*)²

THE fact of the *Caraka Samhitā*, or the Medical Compendium of Charaka, being a composite work is well known at the present day. The work is the joint production of two medical men, Charaka and Dṛiḍhabala, both natives of Kashmir, and living in that country, probably one in the second, the other in the eighth century of our era. Charaka's share itself claims to be no more than an edition of an earlier work by Agniveśa. This man, being one of the traditional six disciples of Punarvasu, called Ātreya or son of Atri, is said to have reduced to writing the oral teachings of his master, an event which must have occurred at some time in the sixth century before our era. Charaka's edition of Agniveśa's work bears the name of *Samhitā*, or Compendium, while the earlier work of Agniveśa is called a *Tantra*, or treatise or textbook. It seems probable that Agniveśa wrote a series of such treatises on the several branches of

¹ For No. I, see this *Journal* for 1906, pp. 283 ff. ; and for No. II, this *Journal* for 1906, pp. 915 ff., and 1907, pp. 1 ff. ; for No. III, see *Archiv für Geschichte der Medizin*, vol. i, pp. 29 ff.

² The following texts are quoted in this paper : AH = Aṣṭāṅga Hrdaya, 1st ed., Kunte, 1880 (in 2 vols.) ; AS = Aṣṭāṅga Saṁgraha, Bombay, Saka, 1810, 2 vols. ; CS = Caraka Samhitā, 2nd ed., Jivānanda, 1896 ; C.CS = Cakradatta, Cikitsita Saṁgraha, ed. D. & U. Sen ; MN = Mādhava Nidāna, 3rd ed., Jivānanda, 1901 ; MS = Mādhava Siddhayoga, Ānandāśrama ed., 1894 ; SS = Suśruta Samhitā, 3rd ed., Jivānanda, 1889.

Medicine as taught by his master Ātreya in the ancient 'University' of Taxila, in the extreme north-west of India. What Charaka did was to combine the substance of these treatises into a single *Samhitā*, or Compendium. For some reason or other, now no longer known, he was unable to finish his work. Some six centuries later it was completed by Dṛiḍhabala. This complementary portion, however, was no longer a compendious edition of the treatises of Agniveśa, but as Dṛiḍhabala himself informs us (CS. viii, 12, v. 79, p. 930), a compilation from the works of several medical men who had written standard works on medicine between his own time and that of Charaka. The foremost among these men was the celebrated Vāgbhāṭa the elder, counted in medical tradition equal to Charaka and Suśruta, who had published a *Samgraha*, or Summary of Medicine, based mainly on the works of those two great authorities, but partly also on those of other men, such as Bheḍa and Kāṅkhāyana.¹ Besides Vāgbhāṭa I, Dṛiḍhabala drew largely on a work of the famous Vṛinda, better known by his sobriquet Mādhava, or the Honeyed, apparently on account of the attractiveness of his writings, who in the seventh or eighth century had published his system of medicine, of which two parts, called respectively *Roga-viniścaya* on Pathology, and *Siddhayoga* on Therapeutics, have survived to the present day.

The preceding statements may appear to be made in rather dogmatic form. But it should be understood that this form has been given them merely for the sake of convenience, so as to define more clearly the points at issue.

¹ Both these men were contemporaries of Ātreya. Bheḍa, indeed, is said to have been one of his six disciples, and a unique manuscript of a *Samhitā* which goes by his name has survived. This work must have been available to Vāgbhāṭa I. But as no work of Kāṅkhāyana now survives, it is doubtful whether Vāgbhāṭa drew on an actual work of his, or merely on quotations from it surviving in other works of later date.

In reality they present no more than a working hypothesis, which, however, is based, and, I think, is conformable to all the evidence already available. Of such evidence we possess a not inconsiderable amount. It is explained in my "Osteology of the Ancient Indians," and in the earlier numbers of these "Studies." It is not sufficient, however, to permit of a final decision, and the main object of the present "Study" is to present an additional body of entirely new evidence which strikingly confirms several of the main items of the hypothesis, while it conflicts with none of them.

The present "Study" also contributes some important elements towards the settlement of another very perplexing question. We know that Dṛiḍhabala contributed about one-third of the contents of the work which now passes under the name of Charaka's Compendium (*Caraka Samhitā*). But we know only partially what particular portions of the work are comprised in that one-third. Dṛiḍhabala himself tells us (CS. vi, 28, vv. 273-5, p. 827) that he contributed two entire *Sthāna*, or Sections, viz., the seventh and eighth, out of the eight sections of which the Compendium consists; and that he also wrote seventeen out of the twenty-eight (or thirty, according to another mode of reckoning) chapters of the sixth section on Therapeutics (*Cikitsita*). The puzzle is to know exactly the identity of the seventeen chapters which Dṛiḍhabala claims for himself. It is common sense to assume that he simply appended his own seventeen chapters to the eleven (or thirteen) already existing, and that therefore he means to claim for himself the last seventeen chapters of the series of twenty-eight (or thirty) which constitute the Therapeutical Section. If we knew for certain the exact serial order of the chapters in that section as it left the hands of Dṛiḍhabala, there would be no difficulty in the matter. But the trouble is that tradition presents us with two serial orders, both found

in existing manuscripts, which seriously conflict with one another. They are shown in the subjoined table :—

TABLE OF THE TWO TRADITIONAL SERIAL ORDERS.¹

28- Series.	30- Series.	Column I, in Jivānanda.	Column II, in Gangādhar.
	1	Rasāyana.	Rasāyana.
	2	Vājikaraṇa.	Vājikaraṇa.
(a) <i>Eleven Chapters ascribed to Charaka.</i>			
1	3	Jvara.	Jvara.
2	4	Raktapitta.	Raktapitta.
3	5	Gulma.	Gulma.
4	6	Prameha.	Prameha.
5	7	Kuṣṭha.	Kuṣṭha.
6	8	Yakṣman or Śoṣa.	Yakṣman or Śoṣa.
7	9	Arśas. (b)	Unmāda.
8	10	Atisāra. (d)	Apasmāra.
9	11	Visarpa. (f)	Kṣata-kṣīṇa.
10	12	Madātyaya. } (h)	Śvayathu or Śoṭha. } (a)
11	13	Dvivraṇīya. }	Udara. }
(b) <i>Seventeen Chapters ascribed to Dṛiḍhabala.</i>			
12	14	Unmāda.	Arśas. (b)
13	15	Apasmāra.	Grahaṇī.
14	16	Kṣata-kṣīṇa.	Pāṇḍu.
15	17	Śvayathu or Śoṭha.	Hikkā-śvāsa.
16	18	Udara.	Kāsa.
17	19	Grahaṇī.	Atisāra. (d)
18	20	Pāṇḍu.	Chardī. (e)
19	21	Hikkā-śvāsa.	Visarpa. (f)
20	22	Kāsa.	Trṣṇā. } (g)
21	23	Chardī. (e)	Viṣa. }
22	24	Trṣṇā. } (g)	Madātyaya. } (h)
23	25	Viṣa. }	Dvivraṇīya. }
24	26	Trimarmīya.	Trimarmīya.
25	27	Ūrustambha.	Ūrustambha.
26	28	Vātavyādhi.	Vātavyādhi.
27	29	Vātaśoṇita.	Vātaśoṇita.
28	30	Yonivyapād.	Yonivyapād.

¹ Regarding the sources on which the Table is based, I may explain that Column I has the support of the Summary List of the chapters, at the end of the *Sūtra Śhāna*, in the two manuscripts, Government of India, No. 2503 (now in deposit with the Asiatic Society of Bengal), p. 695; and (partially) India Office, No. 335, fl. 123. It is taught in the commentary of Chakrapānidatta, at the end of the *Cikitsita Śhāna*, in Tübingen, No. 463, fol. 534b, and is adopted in the editions of Jivānanda

As will be seen, they agree with regard to the six initial, and the five concluding chapters of the section. The former, as one naturally expects, they uniformly ascribe to Charaka; the latter, to Dṛiḍhabala. But respecting the serial order of the intermediate seventeen chapters (7-23), the two traditions greatly differ. One tradition makes the five chapters on *arśas*, hæmorrhoids, *atisāra*, diarrhœa, *visarpa*, erysipelas, *madātyaya*, alcoholic disorders, and *dvivranṭīya*, twofold wounds, to follow the six initial chapters, and ascribes them to Charaka, while the other tradition replaces these chapters by the five on *unmāda*, mental disorders, *apasmāra*, epilepsy, *kṣata-kṣīṇa*, consumptive disorders, *śvayathu*, inflammatory swellings, and *udara*, abdominal enlargements. What adds to the difficulty is that the earliest surviving commentator, Chakrapāṇidatta, supports the former tradition, while the latest edition with any pretence to a critical character—that of Gangādhar—adopts the latter tradition, and has, as we shall see presently, some very weighty evidence in favour of its choice.

There is yet another, perhaps even more perplexing point connected with Dṛiḍhabala's complementing activity. He not only added one-third of the existing Compendium; but he also revised the other two-thirds which Charaka wrote. That he did so, is absolutely certain. For example, the first section, or *Sūtra Sthāna*, as now existing, concludes with a full inventory of the whole Compendium, inclusive of the two last sections and the whole of the twenty-eight (or thirty) chapters of the sixth section;

and Abinās Chandra. Column ii has the support of the Summary List, in the manuscripts, Tübingen, No. 458, fol. 177a, Tübingen, No. 459, fol. 163b, and Deccan College, No. 925, fol. 93a; also partially in India Office, No. 335, fol. 123. It has also the support of the actual order of the chapters in the *Cikitsita Sthāna*, in all six manuscripts available to me, viz., Tüb., 458 and 459, Ind. Off., 335 and 359, Decc., 925, and the old Nepal MS. (dated 303 N.E. = 1183 A.D.). It is adopted in the editions of Gangādhar, and of the two Sens.

therefore, inclusive of the one-third contributed by Dṛiḍhabala. It is obvious that that inventory cannot have been compiled by Charaka, but is the work of Dṛiḍhabala. But further, there are certain passages, the phraseology of which, according to the same early commentator Chakrapāṇidatta, has been modified in what he calls the Kashmir Recension (*kāśmīra-pāṭha*) of the Compendium—which recension, there is good reason to believe, is referable to Dṛiḍhabala's activity. In these circumstances one cannot help suspecting that what has happened in these particular passages, may have happened in others, without being noticed by the commentators. It should be added that in the passages themselves, whether interpolated or merely modified, there is no indication whatsoever of their true authorship. It must be obvious that no correct view of the development of Indian medical science is possible so long as we are unable to distinguish what goes back to the early age of Charaka from what is no older than the comparatively recent time of Dṛiḍhabala. In the sequel I hope to show that the existing text does, after all, offer here and there certain undeniable indications, which, combined with a careful scrutiny of the context, enables one, to a great extent, to separate the original from the supervenient portions of the text.

For the present experimental scrutiny, I have selected those portions of the *Caraka Samhitā* which are concerned with the diseases called *gulma*, or abdominal tumours. The pathology of these growths is explained in chapter iii, of the second section (CS., *Nidāna Sthāna*, pp. 210–214), and its therapeutics in the corresponding chapter iii, of the sixth section (CS., *Cikitsita Sthāna*, pp. 483–499). Both chapters are uniformly ascribed to Charaka by the medical tradition of India, and thus afford a suitable subject for the experiment.

It will be convenient to begin with a brief analysis

of the two chapters. The pathological chapter, which, with the exception of the two concluding verses, is written in prose, is divided into twenty-one paragraphs.¹

§ 1 enumerates the five kinds of *gulma*, which are due to disorder of one humour (air), of two humours in complication (air-bile, and air-phlegm), of three humours in combination (air, bile, phlegm), and of the blood.

§§ 2 and 3 give a summary of the chapter, Ātreya, at the request of Agniveśa, explaining (1) the causes, (2) premonitory conditions, (3) symptoms, (4) troubles, (5) remedies of *gulma*.

§ 4 enumerates the causes of an air-tumour, such as fever, unsuitable use of drugs, but especially irregularities in diet, sexual indulgence, and conduct generally.

§ 5 describes the symptoms of an air-tumour, the air-humour gathering in the intestines, and consolidating into a sort of ball, in any of five localities, viz., in the upper, middle, lower, and two lateral regions of the abdomen.

§ 6 describes the troubles (*vedanā*) of an air-tumour, which may vary in intensity, and consist in the feeling of being bitten by ants or pricked by needles, fever in the evening, dryness in the mouth, shortness of breath, pains in various parts of the body, difficulties in digesting, dark discoloration of the skin, eyes, excreta, etc.

§§ 7 and 8 describe the conditions of an air-tumour when complicated with disorders of the bile-humour. In that case, the tumour, now briefly called bile-tumour, feels soft and yielding. It arises from eating things sour, salty, hot, dry, etc., and is recognized by a greenish or yellowish discoloration, while in other respects the general conditions are much like those of the simple air-tumour.

§§ 9-11a describe similarly the phlegm-tumour, which however feels firm and hard, arises from greasy, heavy,

¹ I adopt, for the sake of convenient reference, the divisions into paragraphs of the Jivānanda edition of 1896, though it is by no means perfect.

sweet, cold food, etc., and is recognized by a whitish discoloration.

§ 11b states that a tumour which arises from the concurrent disorders of all three humours is incurable.

§§ 12–16 describe the blood-tumour, which is caused by disorders in the menstrual discharge, and therefore occurs only in women, whence the ignorant are misled to suspect pregnancy.

§ 17 enumerates certain premonitory conditions.

§§ 18 and 19 explain that every tumour begins with a disorder of the air-tumour, and repeats that a so-called concurrence-tumour is incurable.

§ 20 gives some general directions respecting the treatment of tumours; that lubricants, sudorifics, emetics, and enemas should be first resorted to for regulating the air-tumour, because when that is done the disorders of the other tumours are easily dealt with.

§ 21 repeats, in a versified form, the prose directions given in § 20.

§ 22 briefly summarizes, once more, the contents of the chapter, as being the number, causes, symptoms, premonitory conditions, and remedial treatment of *gulma*.

There are two incongruous points in this professedly pathological account of the tumours, which cannot fail to attract our attention at once. In the first place, §§ 2 and 3 duplicate § 22. Both profess to give a summary of the contents of the chapter, but while § 22 enumerates them in the actual order in which they stand in the chapter, §§ 2 and 3 assign to the premonitory conditions a place which they do not occupy in the chapter. Paragraphs 2 and 3, therefore, are suspect; and in the sequel we shall find this suspicion confirmed by an indication that the whole introductory portion, consisting of §§ 1–3, is the work, either wholly or in a revised form, of Dṛiḍhabala.

In the second place, §§ 20 and 21, containing as they do directions regarding the treatment of tumours, impress

one as being out of place in a chapter on the pathology of those growths, and as belonging rather to the chapter on their therapeutics. As a matter of fact, on referring to the *Aṣṭāṅga Saṁgraha* of Vāgbhata the elder, we find that the whole of § 20 occurs *verbatim* in that work at the commencement of the sixteenth chapter on the therapeutics of *gulma*. And similarly, on referring to Mādhava's great work on therapeutics, called *Siddhayoga*, we find the whole of § 21 verbally repeated, as verse 2, at the beginning of its thirtieth chapter on the treatment of *gulma*. If we further remember that § 20 and § 21 are duplicates, § 21 being substantially only a versified version of the prose statement in § 20, it is difficult to decline the conclusion that whoever wrote those two concluding paragraphs, 20 and 21, copied them *verbatim* from the *Aṣṭāṅga Saṁgraha* and *Siddhayoga* respectively.¹ If this be so, they cannot have been written by Charaka, but must have been added to his pathological chapter by the revisor Dṛiḍhabala, who, on his part, copied them from the works of Vāgbhata the elder, and Mādhava. As a corollary, we have the interesting chronological information that Dṛiḍhabala is posterior not only to Vāgbhata I, but also to Mādhava. It might be objected, as an alternative hypothesis, that Charaka wrote the two paragraphs, and that Vāgbhata, whose therapeutic chapter is in prose, quoted the prose version from § 20, while Mādhava, who wrote in verse, quoted the versified duplicate

¹ The facts seem to be these: Vāgbhata I (in AS., vol. ii, p. 89, ll. 8-12) compressed in prose the substance of Charaka's versified remarks in verses 18-25 of his therapeutic chapter (p. 485), preserving a few catchwords (*jīvē, mārutam*, etc.). Afterwards Mādhava turned the compressed prose version once more into verse (MS., p. 261, vv. 1-4), and in doing so preserved the same catchwords (*mārute, vijīte*, etc.). Still later, Dṛiḍhabala added the prose of Vāgbhata I and the verse of Mādhava to Charaka's genuine *Nidāna* (as §§ 20 and 21, p. 214), without apparently realising, not only that the prose and verse versions were duplicates, but that both these versions themselves were actually duplicates of Charaka's own genuine verses in his *Cikitsā* chapter.

from § 21. There can be no demonstrative proof in such cases, but which alternative is more probable? On the hypothesis of Charaka's authorship we have to admit two incongruities, not only that he appended a distinctly therapeutic statement to his pathological chapter, but further that he went so far as to duplicate that incongruous appendix in prose and verse. Why he should have taken the trouble to duplicate in verse an otherwise incongruous statement, when the whole of the remainder of the chapter is written in prose, passes one's understanding. As we shall see in the sequel, the substance of the statement, in §§ 20 and 21, is actually given by Charaka, in rather more detail, and in a versified form, in the beginning of his chapter on the therapeutics of *gulma* (vv. 18–25 in CS., p. 485). On the Charaka hypothesis, accordingly, we should have to admit that he actually repeated a therapeutic statement of his own as an appendix to his pathological chapter, where it was out of place, and that he further made this incongruous repetition in a duplicate form, in prose (§ 20), and in verse (§ 21). On the other hand, on the Dṛiḍhabala hypothesis, we know that Dṛiḍhabala himself states that he compiled from various sources (CS. viii, 12, v. 79, p. 930), and it is quite intelligible that, mere compiler as he was, he was anxious to utilize his sources to the uttermost, even at the expense of consistency and congruity. To my mind, at least, there can be no question, even on this single piece of evidence, as to which of the two alternatives is to be preferred. But we shall see presently that the evidence in favour of the Dṛiḍhabala hypothesis accumulates as we go on in our enquiry.

I now proceed to the analysis of Charaka's chapter on the therapeutics of *gulma*. It is entirely written in verse, and these (in Jivānanda's edition of 1896, which I here again follow) number 184. It divides itself into three portions. The first, verses 1–17, is pathological;

the second, verses 18–62*a*, is therapeutic ; the third, verses 62*b*–164, is pharmaceutic. The whole concludes with an appendix and a summary, verses 165–84.

Verses 1–17 are pathological. They go over exactly the same ground as Charaka's chapter on the pathology of *gulma*. But the account they give is duplicated as follows :—Verses 1–5 describe in general terms the growth of the four kinds of humoral tumours, i.e., those due to (1) air, (2) air and bile, (3) air and phlegm, (4) combination of all three. Verse 6 enumerates the five localities of the tumours exactly as in § 5 of the pathological chapter ; and verse 16 adds a description of the blood-tumour. In verses 7–15 and 17 the same account is repeated, in some more detail, explaining the causes, symptoms, and troubles of each of the five kinds of tumour.

With regard to the latter more detailed account, it is especially apparent that it is based on Charaka's detailed account of the tumours in his pathological chapter. And I may here add the curious fact that this more detailed account (vv. 7–15 and 17) is a *verbatim* copy of the account of the tumours in Mādhava's great pathological work, known as the *Nidāna*, where it is found in chapter xxviii, verses 6–11, and 12*b* (MN., pp. 174–6).

The improbability of Charaka having written these introductory seventeen verses appears to me obvious. It seems almost impossible that Charaka should have gone to the trouble of versifying the substance of his own pathological chapter, and prefixing it to his therapeutic chapter, where it is quite out of place. It is far more probable that this was done by the uncritical revisor and compiler Dṛiḍhabala. There can be little doubt that the real author of the latter portion of the introduction (vv. 7–15, 17) is Mādhava, who versified the substance of Charaka's pathological chapter for his own pathology (*Nidāna*) ; and from him Dṛiḍhabala, the compiler, copied it. The earlier portion (vv. 1–6, 16) also is, in all

probability, a copy, though for the present I am not able to name its source. It might, of course, have been written by Dridhabala himself, but as he is essentially a mere compiler, that is not very probable.

Verses 18–61 are therapeutical. They constitute the essential portion of Charaka's chapter on the treatment of internal tumours. In verse 18 Charaka explains that he is now going to describe what is the proper course of treating a tumour in its various stages, and that having done so he will recommend a number of formulæ appropriate to each stage. In verse 62*a*, having finished the description of the course of treatment, he repeats the statement that he will now proceed to enumerate the formulæ which are suitable to its several stages. It is plain, therefore, that in verses 18–61 Charaka professes to have covered the whole ground of the therapeutics of tumours. The details are as follows: In verses 18–30 he gives general directions as to the internal treatment of air-tumours with lubricants,¹ decoctions, enemas, and sudorifics. He is particularly careful to explain two points; first, that the treatment must be adapted to the three localities in which tumours occur, viz., the upper or epigastric region of the abdomen (*ūrdhva-nābhi*), the middle, or umbilical region (*paku-āsaya*), and the lower or hypogastric region (*jathara*); and, secondly, that though always on the guard against complications with the other two humours (bile and phlegm), attention must in the main, and at all times, be directed to the rectification of the air-tumour on account of its being the basic cause of all tumours. Next, in verses 31–42, Charaka goes on to describe how bile-complications are to be treated. This is done by means of milk-clysters and purgatives; if necessary, by bleeding; and ultimately, if all other remedies fail, by surgical

¹ Lubricant, in the original, is *sneha*, or oleaginous preparation, especially medicated oil or clarified butter, to be taken internally (*sneha-pāna*).

operation of the tumour when mature. In connection therewith, he describes the signs by which a mature may be distinguished from an immature tumour. Directions are also given for a suitable dietary. In verses 43–6a, Charaka turns to the treatment of a deep-seated tumour. Such a tumour, apparently, is not to be treated surgically, but only by means of lubricants and purgatives, till it disperses of its own accord. In verses 46b–61b, Charaka proceeds to describe the treatment of a phlegm-complication by means of fasting, emetics, sudorifics, purgatives, and clysters, together with attention to a suitable diet. If these remedies prove ineffectual, the surgeon is to be called in to apply potential or even actual cautery, and ultimately the knife. Finally, in verse 61c, Charaka directs that in the case of a concurrence of disorders of all three humours, a suitable combination of all the before-mentioned remedies must be resorted to.

Respecting the last point, it may be noted that this is all that Charaka says about the concurrence-tumour. As he had previously (in the pathological chapter) declared that that kind of tumour was incurable, he does not trouble about describing it in detail, but contents himself with indicating a method of alleviating it. There is another point I may note at once in passing; it will be discussed more in detail in the sequel. Charaka makes no mention whatsoever of the blood-tumour of women. The only tumours which he notices in the course of his therapeutic exposition are the air-tumour, the tumours due to the complication of two humours (air and bile, air and phlegm), and the tumours due to all three humours concurrently. Besides these three (or four) kinds of humoral tumours, he knows no other.¹

¹ The scheme of Charaka is essentially one of three kinds, viz., tumours of one humour, of two humours combined, and of three humours combined. But the second kind admits of two varieties, viz., air *plus* bile, and air *plus* phlegm. Hence, in a sense, the scheme may be said to be one of four kinds. The scheme of Susruta the younger (see p. 1022)

Having described the proper method of treatment of tumours, Charaka proceeds to the pharmaceutic portion (vv. 62–164) of his therapeutic chapter, in which he gives a list of formulæ for preparing the various kinds of remedies which he had recommended in the course of that description. The list divides itself into three sections, which are marked off from one another by a few words of general advice regarding digestion. The details are as follows:—In verses 62–107 Charaka enumerates a number

is one of five kinds, viz., tumours of the air, bile, and phlegm humours (each singly), of the three humours combined, and of the blood. But the bile and phlegm tumours of Suśruta, though either of them seemingly of a single humour, are really identical with the air-bile and air-phlegm tumours of Charaka. Vāgbhata I, in his *Aṣṭāṅga Saṃgraha* (vol. i, p. 288, ll. 8, 9), propounds a theory of eight kinds, viz., three tumours of a single humour (air, bile, phlegm), three tumours of a couple of humours (air-bile, air-phlegm, and bile-phlegm), one tumour of all three humours combined (air-bile-phlegm), and one blood-tumour. This, however, is mere scholastic trifling, and is practically admitted to be such by Vāgbhata himself; for in his subsequent description of the several kinds of *gulma* he speaks only of the five kinds of Suśruta's scheme, but ignores entirely his own additional three (bile, phlegm, and bile-phlegm) as unrealities. The eightfold division of Vāgbhata I is adopted by Vāgbhata II in his *Aṣṭāṅga Hrdaya* (vol. i, p. 784, v. 32). Mādhava, in his *Nidāna* (p. 172, v. 1) adopts the fivefold division of Suśruta; and he is followed by Dṛḍhabala, who foists that division into Charaka's account of *gulma* (*ante*, p. 1003). Instead of §§ 1–3 of the existing redaction, the original text of Charaka may be suggested to have been something as follows:—*Iha khalu trayo guḥmā bhavanti | tad-yathā vāta-gulmaḥ saṃśrīṣṭa-gulmo nicaya-gulmaḥ*. || And combining this with Suśruta's scheme, above-mentioned, Vāgbhata I writes (*AS.*, p. 288, ll. 8b, 9): *Gulmo 'śādhā prthag-doṣair saṃśrīṣṭair = nicaya-gataih | ārtavaśya ca doṣeṇa nārīṇāṃ jāyate 'śāmaḥ*. || The scheme, found in the Bower MS., is the fivefold one of Suśruta II. Thus five *gulma* are mentioned in part ii, vv. 237 and 256, and the blood-tumour in part ii, v. 361. This places the date of the treatise in the Bower MS. after Suśruta II. In this connection the scheme of the *Hārīta Saṃhitā* is noteworthy. It includes five *gulma*; but the blood-tumour is not among them. It is based on the principle of locality: of these localities there are five, *hrd*, *kukṣi*, *nābhi*, *vasti*, and *madhya*, and in them respectively there are five *gulma*, viz., *yakṛt* (liver), *aśṭhīlikā*, *granthī*, *caṇḍa-vṛddhi* (hernia?), and *plīhan* (spleen). This scheme appears to include diseases to which the term *gulma* as used by Charaka and Suśruta does not apply at all.

of formulæ for preparing lubricants, purgatives, nutrients, etc., useful in combating an air-tumour. Now come two verses, 108 and 109, of general advice.¹ Verses 110–30 are devoted to a list of formulæ useful in bile-complications. After two more verses, 131 and 132, of general advice,¹

¹ It may be noted that the formula in verses 65, 66 (in CS., p. 489), is found also in Suśruta, verses 26, 27 (in SS., p. 805). It is one of the few verbal coincidences between the textbooks of Suśruta and Charaka, and may be due to copying either from one another or from a common source—a point still waiting for exact investigation. Verses 108a and 132a are quoted *verbatim* in AS., vol. ii, p. 95, ll. 18, 19, by Vāgbhata I, who explicitly indicates them as a quotation by the prefixed phrase, *bhavati c = ātra*.—Some verses in the Jiv. ed. of 1896 are altogether spurious, being due neither to Charaka nor Dṛḍhabala. To these belong v. 64a, on p. 488, which cannot be genuine for several reasons: (1) the *ṣaṭpala* formula, for which the verse refers the reader to the *rāja-yakṣman* chapter, as a fact occurs in the *gulma* chapter itself, at p. 495, in verses 143, 144, though with the name *pañcakola*; (2) the *ṣaṭpala* of the *rāja-yakṣman* chapter occurs on p. 531, where, however, there is nothing to identify it as the *ṣaṭpala*; (3) the *rāja-yakṣman* chapter, coming after the *gulma* chapter, the reference on p. 488 would be a reference forward to p. 531, instead of backward; (4) the verse is not found in the old Nepal MS. (fl. 243b), nor in any of the other MSS. accessible to me (Ind. Off. 335, fl. 279b; Ind. Off. 359, fl. 21a; Tüb. 450, fl. 424a; Tüb. 459, fl. 53a; Decc. 925, fl. 226a), nor in any edition, except Jiv., 1896, and Abinās Chandra. The interpolation is clearly based on a remark in AS., vol. ii, p. 89, l. 14, where the reader is referred to the *rāja-yakṣman* chapter for the *ṣaṭpala* formula. There the remark is justified, for in AS. the *rāja-yakṣman* chapter comes before the *gulma* chapter, and the reference, therefore, is backward, from p. 89 to p. 38, where the *ṣaṭpala* formula is given with that very name. Moreover, AS. does not give the *pañcakola* formula in its chapter on *gulma*. In fact, verse 64a is a very stupid and apparently modern interpolation. Also verses 82–6, on p. 490, are in all probability not genuine. They are, it is true, found in some MSS. (e.g., Ind. Off. 359, fl. 224a; Tüb. 458, fl. 425a), and are admitted in the editions of Gangādhar, the two Sen, and Abinās Chandra. But they are omitted in some of the oldest and best MSS. (e.g., old Nepal MS., fl. 244a; Ind. Off. 335, fl. 280b; Tüb. 459, fl. 54a; Decc. 925, fl. 226b; also in Jiv., 1st ed., 1877, p. 515), as well as by Chakrapāṇidatta, who, in his *Cikitsā Saṃgraha* (p. 339), quotes the whole passage, verses 81–91, but omits verses 82–6. His commentator, Śiva Dāsa, however, refers to them, so that we may conclude that he had them in his text of Charaka, while they were wanting in the text used by Chakrapāṇidatta. Seeing that they are substantially identical with verses 75–80, the balance of probability is for their being spurious, though a comparatively early interpolation.

come verses 133–64 giving formulæ for the treatment of phlegm-complications.

This concludes the promised list of formulæ, and according to Charaka's own statement, above referred to (p. 1008), one would expect his therapeutic chapter to close here. But instead of closing, it proceeds to add two small paragraphs, one of which, comprising verses 165–7, gives a description of certain incurable tumours due to concurrent disorders of all three tumours; while the other, comprising 168–71a, gives directions respecting the treatment of blood-tumours. These two paragraphs clearly constitute an appendix to the therapeutic chapter; but that the appendix cannot have proceeded from Charaka seems obvious enough from its character. For, as regards the first paragraph, it is quite out of place where it stands. Being pathological, its proper place would be at the end of Charaka's pathological chapter, in § 19, where Charaka refers to the incurable tumours (see p. 1004). As a matter of fact, that paragraph does occur *verbatim* in that very place in Mādhava's Pathology (*Nidāna*, p. 177). For there it stands at the end of the chapter on *gulma*, which is its proper place. There can be no reasonable doubt that Dṛiḍhabala quoted it from Mādhava, because, as he noticed quite correctly, the pathological chapter of Charaka omitted to give a detailed description of the incurable concurrence-tumour. But, uncritically enough, he added it as an appendix to the therapeutic instead of the pathological chapter. As to the second paragraph on the blood-tumour (vv. 168–78a), it reproduces in a versified form the prose statement of Vāgbhaṭa I in his *Aṣṭāṅga Saṃhitā* (ch. xvi, vol. ii, p. 95, ll. 8–17). Charaka's genuine exposition (vv. 18–92a), as has been previously (p. 1009) pointed out, makes no mention at all of the blood-tumour. It suggests itself that Dṛiḍhabala, noticing the omission, supplied it from Vāgbhaṭa I's work. In this case, he could not so well

draw on Mādhava's therapeutic *Siddhayoga*; for that work (ch. xxx, vv. 36–9, pp. 268–9) contains but a bare mention of the blood-tumour.¹

Following upon the appendix, the therapeutic chapter winds up, in verses 178*bc*–84, with a summary of its contents. That this summary, in the form in which we now have it, cannot be the work of Charaka, is shown by the circumstance that it contains, in verses 182*b*–4, a reference to the matters mentioned in the introduction and appendix, neither of which can be compositions of Charaka.

Before proceeding farther, I must revert to a passage of the concluding division of the pharmaceutic portion, which appears to me to exhibit distinct marks of being an interpolation of Dṛiḍhabala. The passage comprises verses 133*b*–6. These verses give directions as to the method of cupping a phlegm-tumour patient. It seems very doubtful whether the process of cupping was included in Charaka's scheme of treating a phlegm-tumour. Referring to that scheme in the earlier portion of the therapeutic chapter, we find Charaka directing, in verses 49–51, that the patient should be made to vomit and to sweat, and when this had the effect of relaxing the rigidity of the tumour, the patient should be given lubricants, enemas, and purgatives prepared with the so-called *daśa-mūla* (or ten-roots) drugs. There is here no recommendation to bleed the patient by cupping. If we now turn to the pharmaceutic portion of Charaka's therapeutic chapter we find in verse 133*a* a direction to cause vomiting, in verse 137*a* a formula how to sweat the patient, and in verse 138 a formula for the preparation of the *daśa-mūla* purgative. All this agrees with Charaka's earlier directions. And when we now find between verses 133*a* and 137*a* interpolated a direction

¹ It may be added that Vāgbhāṭa II, in his *Aṣṭāṅga Hrdaya* (ch. xiv, vv. 19, 122–9), again quotes Dṛiḍhabala's verses in a slightly modified form. The prose statement of Vāgbhāṭa I appears to be based in part on Suśruta's verses (SS., *Utt. Sth.* xlii, vv. 119, 120, p. 805).

for cupping (vv. 133b–6), and further find that precisely the same direction, in the same connection, is given in the *Aṣṭāṅga Saṁgraha* (vol. ii, from p. 93, l. 25, to p. 94, l. 5), it seems impossible to refuse the conclusion that the verses in question are an interpolation by Dṛiḍhabala on the basis of the AS. remarks. With regard to the latter, it is to be noted that they omit all details of the operation, but refer for them to a previous chapter on *yantra-śāstra-vidhi*, or “the employment of instruments” (38th of the *Sūtra Sthāna*, vol. i, p. 169, ll. 15, 16). But as the *Caraka Saṁhitā* does not contain a similar chapter on instruments, and hence the interpolator could not avail of a reference to it, he was compelled to give, and does give, the details of the operation in the *gulma* chapter itself. Another point which is in favour of these verses being an interpolation of Dṛiḍhabala is the fact that throughout his directions for treating tumours the genuine Charaka never enters into the details of operative methods, but at once recommends to have recourse to the surgeon, whose business, he says, it is to intervene operatively (see vv. 42 and 61). Lastly, it is to be observed that Mādhava, who closely follows Charaka in his therapeutic treatise *Siddhayoga*, entirely ignores the use of cupping.

In the course of the foregoing analysis I took occasion to point out that it contains constructive evidence of Dṛiḍhabala's interference with Charaka's original text. I shall now adduce some direct evidence in corroboration. It occurs in the pharmaceutic portion (vv. 62b–164) of the therapeutic chapter. In that portion the *Siddhi Sthāna* (or eighth section of the *Caraka Saṁhitā*), which is admittedly the composition of Dṛiḍhabala, is thrice referred to by name. It is first named in verses 98 and 99. In verse 95 Charaka had been speaking of sudorifics (*sveda*), and he had referred to the fourteenth chapter (called *sveda-vidhi*, or “the employment of sudorifics”) of his first section (or *Sūtra Sthāna*) for further information on the subject. He

had next referred, in verses 96 and 97, to the importance of clysters (*vasti*, *nirūha*) in the treatment of tumours, but had omitted to give any particular formula for preparing them. It was evidently for the purpose of repairing this omission that Dṛiḍhabala inserted the two verses 98 and 99. They run as follows:—"Various approved clysters for curing tumours are given in the *Siddhi Sthāna*; also medicated oils for the same purpose will be found in the chapter on *vātaroga* (i.e. rheumatic and nervous diseases). These oils, administered as drinks, or unguents, or clysters, are very effective in the case of air-tumours, for oil is the subduer of the air-humour." Of the *Siddhi Sthāna* we know that Dṛiḍhabala himself claims to be the author (CS. vi, 28, vv. 273-5, p. 827); and the reference is to the third chapter (*vasti-sūtrīya siddhi*) of that *Sthāna* which treats of the preparation of clysters. The chapter on *vātaroga* (or, as it is more commonly called, *vāta-vyādhi*) is the twenty-sixth (or, according to the other reckoning, twenty-eighth) chapter of the Therapeutic Section (*Cikitsita Sthāna*), and, from the way in which it is mentioned in connection with the *Siddhi Sthāna*, it may rightly be concluded that Dṛiḍhabala indicates himself as its author.

The second reference to the *Siddhi Sthāna* occurs in verse 128*b*. In verse 127 Charaka had recommended to sufferers from bile-tumours certain medicated oils as unguents; and in verse 128*a* he added a milk clyster (*kṣīra-vasti*), medicated with bitter drugs. The latter, he indicated, was to be found in the first (or third) chapter of his Therapeutic Section (*Cikitsita Sthāna*), where he described the treatment of bilious fevers (*pitta-jvara*). To this Dṛiḍhabala added the following half-verse (v. 128*b*): "Also those clysters which will be found in (the third chapter of) the *Siddhi Sthāna* are useful to patients from bile-tumours."

The third reference occurs in verses 157 and 159. In the former verse Dṛiḍhabala says that "Approved formulæ

for enemas (*nirūha*) will be found in the *Siddhi Sthāna*; also approved formulæ for the preparation of medicated liquors in the chapters on the treatment of *grahanī*, or diarrhœa, and of *arśas*, or hæmorrhoids." And after a remark of Charaka, in verse 158, that the powders, pills, and caustics (*kṣāra*), appointed for air-tumour patients, may be used also for phlegm-tumour patients, if prepared with double the quantity of drugs, Dṛiḍhabala, with the object of particularising the caustics, explains, in verse 159, that "The caustics, here meant for phlegm-tumour patients, are those described, as approved and unattended by risk, in the chapter on *grahanī*, or diarrhœa." The chapter on *grahanī* is the seventeenth (or nineteenth) of the Therapeutic Section (*Cikitsita Sthāna*), and here again, as in the previously-mentioned chapter on *vātaroga*, the association of the chapter on *grahanī* with the *Siddhi Sthāna* suggests an indication by Dṛiḍhabala of his own authorship.

The inference with respect to Dṛiḍhabala's authorship of the two chapters on *vātaroga* and *grahanī* receives support from the Indian medical tradition. Both traditional serial orders (*ante*, p. 1000) allot the two chapters to Dṛiḍhabala. Moreover, they are specifically attributed to him by the commentators Vijaya Rakshita and Arunadatta, in the first half of the thirteenth century. The former, in his *Madhukoṣa* commentary on Mādhava's *Nidāna* (Jiv. ed., pp. 147, 152), expressly ascribes the *vātaroga* chapter to Dṛiḍhabala; and the latter, in his commentary on the *Aṣṭāṅga Hṛdaya* (*Śārīra Sth.* iii, vv. 62b, 63a, p. 571) does the same with regard to the *grahanī* chapter. Of course, this need be no independent testimony, for the two commentators may have had for the ascription no other ground than the inference now under discussion; but even if this be so, the agreement shows the obviousness of the inference which suggests itself so naturally to independent investigators.

But this leads a step further. There is good reason

(see my "Osteology," p. 14) for believing that Vāgbhaṭa II, when he wrote his *Aṣṭāṅga Hr̥daya*, was acquainted with Dṛiḍhabala's edition of the *Caraka Saṁhitā*. In his chapter on the treatment of *gulma* (AH. iii, 14, p. 249 ff.) he refers to Dṛiḍhabala's interpolation in the following terms (ibid., vv. 99 and 102a, p. 265): "For the purpose of curing tumours let the physician administer the enemas (*nīrūha*) described in the *Kalpa-siddhi Sthāna*," and "in a phlegm-complication the caustics (*kṣāra*) should be administered which are mentioned in the chapters on the treatment of *arśas*, or hæmorrhoids, *aśmarī*, or gravel, and *grahaṇī*, or diarrhœa." Here we see that Vāgbhaṭa II, while quoting Dṛiḍhabala, enlarges the list of chapters by the addition of *aśmarī*. The treatment of *aśmarī* is included in the chapter on the treatment of what is called *Trimarmāya* (or Three Vitals). That chapter is the twenty-fourth (or twenty-sixth) of the Therapeutic Section (*Ōkitsita Sthāna*) of Charaka's Compendium, and is uniformly attributed to Dṛiḍhabala by the Indian tradition, e.g. in the two traditional serial orders (p. 1000), by the commentator Vijaya Rakshita (in his *Madhukoṣa*, pp. 179, 180, 186) and by Bhaṭṭotpala (in his commentary on the *Bṛhat Saṁhitā*, lii, 39–41, Sudhakar ed., p. 661). It can hardly be doubtful, therefore, that the same attribution was intended by Vāgbhaṭa II (ninth century); but if so, it follows, as a natural conclusion, that in his opinion the chapter on *arśas*, which is so significantly associated with those on *aśmarī* and *grahaṇī*, was also the composition of Dṛiḍhabala. This conclusion is confirmed by the fact that, as we have seen, Dṛiḍhabala himself, in verse 157, associates the chapter on *arśas* with that on *grahaṇī*, and both these chapters with the *Siddhi Sthāna*, which certainly was his own composition. Dṛiḍhabala, therefore, clearly appears to indicate himself as the author of all three portions of the *Caraka Saṁhitā*. Now the chapter on *arśas* forms one of the crucial points

of the whole difficulty. For, as will be seen by reference to the Table on p. 1000, the chapter on *arśas* is ascribed by one of the two traditional serial orders to Charaka, while the other attributes it to Dṛiḍhabala. The latter is that adopted by Gangādhar in his Berhampur edition, and if the inferences above drawn from Dṛiḍhabala's own statements, as well as from those of the commentators, are admitted to be correct, it follows that that serial order, in fact, is the true one. And this conclusion, in its turn, practically decides the whole difficulty about the identity of the seventeen chapters which Dṛiḍhabala contributed to the *Cikitsita Sthāna*. The main point which makes one feel not quite satisfied with the solution is the testimony of the great commentator Chakrapāṇidatta (c. 1060 A.D.), who adopts the rival serial order. Until this point has been satisfactorily cleared up, perhaps it may be better to allow the authorship of the ten chapters, numbered 7–10 in the Table of the two Serial Orders, to remain an open question.

I may, however, briefly mention another piece of evidence in favour of the serial order in question, viz. that in column ii of the Table. According to it the two chapters on *unmāda* and *apasmāra* take their places (Nos. 7 and 8) immediately after the sixth chapter on *yakṣman*. In the *Nidāna Sthāna*, which is admittedly the composition of Charaka, they have precisely the same position, while in the rival serial order (col. i of the Table) they stand in a very different place (Nos. 12 and 13), separated from the sixth by five intermediate chapters. The six initial chapters, from *jvara* down to *yakṣman*, are, in both serial orders alike, attributed to Charaka; and it may reasonably be argued that, if Charaka wrote any more chapters, he would keep to his own order, exhibited in the *Nidāna Sthāna*, and after finishing with *yakṣman*, would go on to the treatment of *unmāda* and *apasmāra*, instead of writing five chapters on subjects

not touched on at all in his *Nidāna*.¹ As the therapeutic order in column ii exactly agrees with the pathological order in Charaka's *Nidāna*, it seems only reasonable to hold that the order shown in that column is the true one.

But to return to our previous discussion, I have shown (p. 1012) that there is good reason to attribute to Dṛiḍhabala the Appendix to the therapeutic chapter on *gulma*, which deals with the incurable tumour and the blood-tumour. Respecting the latter tumour, I may now add a further unexceptionable proof of the authorship of Dṛiḍhabala. In verse 174 reference is made to a clyster called *daśa-mūlika*, or 'prepared with the set of ten roots.' The formula for preparing this clyster is found in the third chapter of the *Siddhi Sthāna*, verses 59 and 60 (CS. viii, 3, p. 880), where it is named *dvi-pañca-mūlika*, or 'prepared with the set of twice-five roots.' Dṛiḍhabala's account of the blood-tumour, as has been already observed, is, in the main, a versification of the prose account by Vāgbhaṭa I in his *Aṣṭāṅga Saṁgraha* (AS., vol. ii, p. 95, ll. 8-17). In the latter work, the *daśa-mūlika* is also referred to (ibid., l. 14), and the formula for preparing it is given (in prose, but versified by Dṛiḍhabala) in the fifth chapter of its *Kalpa Sthāna*² (AS., v, 5, vol. ii, p. 154, ll. 18-21), also under the name of *dvi-pañca-mūlika*. Both circumstances, the close agreement with Vāgbhaṭa I, and the reference to the *Siddhi Sthāna*, prove unequivocally that the account of the blood-tumour cannot come from Charaka, but has been added by Dṛiḍhabala on the basis of the *Aṣṭāṅga Saṁgraha* of Vāgbhaṭa I.

¹ There can be no doubt that the *Nidāna Sthāna*, equally with the *Cikitsita Sthāna*, was left incomplete by Charaka; but whatever chapters they contained would be expected to have run in the same order.

² The *Kalpa Sthāna* of Vāgbhaṭa I corresponds to the *Siddhi Sthāna* of Dṛiḍhabala. In the *Aṣṭāṅga Hr̥daya* of Vāgbhaṭa II, it is called *Kalpa Sthāna*, or *Kalpa-Siddhi Sthāna* (AH. i, 1, v. 43; iv, 14, v. 99b, in vol. i, p. 30; ii, p. 265), the latter term witnessing to Vāgbhaṭa II's acquaintance with Dṛiḍhabala's edition of the *Charaka Samhitā*.

I have already (p. 1007) referred to the extreme improbability of the introductory portion of the therapeutic chapter (vv. 1-17) having been written by Charaka. It is concerned with the pathology of the *gulma* diseases, and recapitulates in verse the whole of the contents of the prose chapter on that subject which is actually contained in the *Nidāna Sthāna*, or Pathological Section of Charaka's Compendium. It is incredible that Charaka should have stultified himself by repeating his own pathological remarks as an introduction to his therapeutical teaching. But there exists some more definite proof in support of this contention. The portion in question contains statements with respect to the situation and number of the tumours which are irreconcilable with admitted doctrines of Charaka. Thus, after recommending lubricants (*sneha*) and clysters (*vasti*) as remedies for tumours, Charaka, in verse 22, explains that "lubricants should be used when the tumour is situated in the upper region of the abdomen (*ūrdhva-nābhi*, lit. above the navel); clysters, when it occurs in its lower region (*pakv-āśaya*, lit. seat of ripe digestion); and both, when it is found in the middle region (*jāthara*, belly, bowels)." As these three regions include the whole of the abdomen, which is the seat of the *gulma* diseases, it is obvious that Charaka recognizes only three localities for a tumour. On the other hand, the introduction, in verse 6, distinctly enumerates five localities. It states explicitly that "tumours occur in five situations (*pañca sthānāni*), the pubic (*vasti*), the umbilical (*nābhi*), the cardiac (*hṛd*), and the two lateral (*pārśve*) regions of the abdomen." This fivefold division, which likewise includes the whole of the abdomen, is incompatible with the threefold division. It cannot well be held that Charaka taught both schemes of division, one in the introduction, and another conflicting with it in the body of the therapeutic chapter. The fact is that the fivefold division is the doctrine of Suśruta; that is

to say, of Suśruta the younger, who wrote the Complementary Treatise (*Uttara-Tantra*) of the Compendium that goes by the name of Suśruta. It is taught explicitly in the forty-second chapter of that Treatise, in verse 3a (SS., p. 803): "The five seats of a tumour in men are the two lateral (*pārśve*), the cardiac (*hṛd*), the umbilical (*nābhi*), and the pelvic (*vasti*) regions."¹ From Suśruta that doctrine was definitely adopted in nearly all subsequent medical books in supersession of the earlier threefold division of Ātreya, handed down by Charaka. Thus Vāgbhata the elder teaches the fivefold division, both in the Pathological (AS., *Nidāna Sthāna*, ch. xi, vol. i, p. 288, l. 22) and Therapeutic Sections (AS., *Cikitsita Sthāna*, ch. xvi, vol. ii, p. 90, ll. 16, 17) of his textbook *Aṣṭāṅga Saṁgraha*. So also Mādhava, in his *Nidāna*, ch. xxviii, verse 1 (MN., p. 172). From Vāgbhata I and Mādhava, who were among the chief sources of Dṛḍhabala, the latter adopted the fivefold division, and introduced it into Charaka's account of *gulma*, both the pathological (CS., *Nidāna*, § 5, p. 211) and therapeutic (*Cikitsita*, introd., v. 6a, p. 484), heedless of the fact that the therapeutic directions of Charaka (*ibid.*, v. 22, p. 485) were based on the threefold division. Vāgbhata the younger followed the inadvertent lead of Dṛḍhabala. In the *Nidāna Sthāna* of his Compendium *Aṣṭāṅga Saṁgraha*, ch. xi, verse 40b (AH., vol. i, p. 786), he teaches the fivefold division of Suśruta, but in the *Cikitsita Sthāna*, ch. xiv, verse 4 (AH., vol. ii, p. 249) he quotes the threefold division *verbatim* from Charaka. The latter case deserves notice, because of the different and more consistent way in which Vāgbhata the elder deals with it. The passage in question is that above referred to, Charaka's verse 22. When Vāgbhata I comes to deal with it in his therapeutic

¹ This is practically the same as the modern division of the abdomen, as shown, e.g., in the diagram on p. 733 of Dr. Gerrish's *Textbook of Anatomy* (2nd ed.).

chapter, he does not quote it, but alters it so as to suit the fivefold division which he had adopted. He says (AS., *Cik.*, ch. xvi, vol. ii, p. 90, ll. 16, 17): "lubricants should be used when the tumour is situated in the cardiac region (*hrdaya*); clysters, when it is in the pelvic region (*vasti*); and both, when it is in the umbilical (*nābhi*) and lateral (*pārśve*) regions." This shows that Vāgbhāṭa I had realised the inconsistency of the threefold division being retained by an expositor who held the fivefold division. Neither of the two subsequent expositors, Dṛiḍhabala and Vāgbhāṭa II, were heedful of it. The action of Dṛiḍhabala in introducing in this heedless way the fivefold division into the therapeutic chapter of Charaka is of no little importance, because it furnishes us with one of the clearest evidences of Dṛiḍhabala having interfered with the original text of the pathological chapter of Charaka. As shown previously (p. 1003), paragraph 5 of that chapter, as it now stands, states that tumours may grow up in five places in the abdomen, viz., the cardiac, umbilical, pelvic, and two lateral regions. This is the well-known fivefold division of Suśruta. It cannot have stood in the text as written by Charaka. There it must have been the threefold division into the cardiac, umbilical, and pelvic divisions.¹

The question of the number of localities in which the *gulma* disease is said to be met with is, to some extent, complicated with the number of their kinds. In close, though not essential, connection with the doctrine of the five localities of tumours (see *ante*, p. 1021), Suśruta the younger also ascribes to them five varieties.² In chapter 42, verses 5b and 6a (SS., p. 803), he explains that

¹ The existing text is *hrdi vastau pārśvayor = nābhyām vā sa (gulmaḥ) śūlam = apajanayati*. The original text probably was *jāṭhare pakvāśaye ūrdhva-nābhyām vā*, etc.

² The equalization of the number is probably only due to the Indian scholastic love of symmetry.

“tumours may arise, in people generally, from disorders in the humours, acting either singly, or concurrently; and in women especially, a further kind of tumour may arise from disorder in their menstrual blood.” And then he goes on (in vv. 8–12) to describe in detail the following five kinds of tumours, namely, those due—(1) to disordered air, (2) disordered bile, (3) disordered phlegm, (4) concurrent disorder of all three humours, and (5) disordered blood. Now, as previously (p. 1009) pointed out, Charaka in his therapeutic chapter knows, and describes only three kinds of tumours, viz., (1) those due to one disordered humour (air), (2) those due to two disordered humours in complication (air-bile and air-phlegm), and (3) those due to the concurrent disorder of all three humours (air, bile, phlegm). And it is in agreement (whether essential or not) with this doctrine of three kinds of tumours that, as noticed on p. 1020, Charaka also teaches a triad of positions in which a tumour may occur. It follows, therefore, that when Charaka is made to teach a pentad of tumours (in v. 6a), and, conformably thereto, the existence of a blood-tumour (vv. 168–77a), the discrepancy is due, not to Charaka, but to his uncritical revisor and interpolator, Dṛiḍhabala. Moreover, as Charaka is represented as teaching this discrepant doctrine, both in his therapeutic and pathological chapters, this fact proves that both chapters have suffered from the revising labours of Dṛiḍhabala. As to the therapeutic chapter, we have seen (p. 1012) that the doctrine of the blood-tumour is taught in an appendix (vv. 168–77a). The very fact that it occurs in an appendix, and the further incongruous fact that though a pathological matter, it is appended to a therapeutic chapter (two matters, which the genuine Charaka always keeps separate), prove, with as much cogency as the circumstances admit, that Charaka cannot be the author of the appendix, but that Dṛiḍhabala must have written it. Similarly, all those portions of the existing pathological chapter, which teach the un-Charakiyan

doctrines of a pentad of tumours, and a blood-tumour, cannot be genuine compositions of Charaka, but must be either modifications or entirely new additions made by Dṛiḍhabala. These portions are, (1) the three initial paragraphs, for §§ 1 and 2 mention the pentad of tumours, and § 3, as previously observed (p. 1004), not only duplicates the genuine summary in § 22, but enumerates the items in a false order; and (2) the five paragraphs 12–16, for they set out in detail the doctrine of the blood-tumour. For the sake of completing the enumeration of the spurious accessions to the pathological chapter, I may here add, (3) the passage, already noted (pp. 1003 and 1022) in § 5, which mentions the pentad of positions of a tumour, and (4) §§ 20 and 21, because (see p. 1005) they are *verbatim* quotations from Vāgbhaṭa the elder's *Aṣṭāṅga Saṁgraha* and Mādhava's *Siddhayoga* respectively, and because they exhibit the incongruity of appending therapeutic matters to a pathological chapter.

Regarding the description of the blood-tumour in §§ 12–16 of the pathological chapter, the manner in which it is done affords a further curious evidence of the authorship of Dṛiḍhabala. As previously observed (pp. 1005, 1012), one of the main sources of Dṛiḍhabala in his revisionary and complementary activity was the *Aṣṭāṅga Saṁgraha* of Vāgbhaṭa the elder. Comparing the pathological (*Nidāna*) chapters of that work and of the *Charaka Saṁhitā* we find their relation to be as follows (see Table I on p. 1028). Corresponding to §§ 1–3 in Charaka, which I have already attributed to Dṛiḍhabala, there is nothing in the *Aṣṭāṅga Saṁgraha*. Corresponding to §§ 4–11, which contain Charaka's description of the humoral tumours, there is Vāgbhaṭa's description (AS., vol. i, from p. 288, l. 10, to p. 289, l. 13), which closely, but by no means slavishly, follows the description of Charaka. On the other hand, §§ 12–16, which contain Charaka's description of the blood-tumour, agree, in §§ 12–14, almost *verbatim*, with the

corresponding description in the *Aṣṭāṅga Saṁgraha* (vol. i, p. 289, ll. 14–22). Corresponding to §§ 17–19 in Charaka, there is nothing in Vāgbhaṭa I; but § 20 in Charaka is quoted *verbatim* from the opening lines of Vāgbhaṭa I's therapeutic (*Cikitsita*) chapter (vol. ii, p. 89, ll. 8–11), while § 21 in Charaka is quoted *verbatim* from the commencement of the therapeutic chapter of Mādhava's *Siddhayaoga* (MS., v. 2, on p. 261). Corresponding to § 22, which contains the single summing-up verse of Charaka, there is nothing in the *Aṣṭāṅga Saṁgraha*, which contains an altogether different series of concluding verses, partly based on Suśruta.¹ This summary comparison discloses a curious state of things, especially in the large descriptive portion of the chapters. The almost verbal agreement of the description of the blood-tumour in §§ 12–14, may be seen from the subjoined parallel columns, the identical passages being shown in italics :—

CARAKA SAṂHITĀ.	AṢṬĀṄGA SAṂGRAHA.
<i>Soṇita-gulmas = tu khalu striyā</i> <i>eva bhavati, na puruṣasya garbha-</i> <i>koṣṭh-ārtav-āgamana-vaiśe-</i> <i>ṣyāt 12 Pāratantryād = avai-</i> <i>śāradhyāt = satatam = apacār = ā-</i> <i>nurodhād = vegān = udirṇān =</i> <i>uparundhantya āmagarbhe</i> <i>v = āpi acirāt = patite tath = āpy</i> <i>= acira-prajātāyā rtau vā vāta-</i> <i>prakopanāny = āsevamānāyā</i> <i>vātaḥ prakopam = āpadyate</i> <i> 13 Sa prakupito yonyā</i> <i>mukham = anupraviṣy = ārtav-</i> <i>am = uparunaddhi māsi māsi</i> <i>tad = ārtavam = uparudhyamā-</i> <i>nam kukṣim = abhivardhayati</i> <i> 14 </i>	<i>Rakta-gulmas tu</i> <i>garbha-</i> <i>koṣṭh-ārtav-opagamana-vaiśe-</i> <i>ṣyāt Pāratantryād = avai-</i> <i>śāradhyād = apacār = ā-</i> <i>nurodhac = ca striyā eva bhavati </i> <i>tatra yadā sā r̥tumatī nava-</i> <i>prasutā yoni-rogiṇī</i> <i>vā vāta-</i> <i>lāny = āsevate tadā</i> <i>asya vāyuh</i> <i>kupito yonyā</i> <i>mukham = anupraviṣy = ārtav-</i> <i>am = uparunaddhi māse māse</i> <i>tad = uparudhyamā-</i> <i>nam kukṣim = abhinirvartayati </i>

Clearly, there must have been copying on one side or the other, but considering all the evidence that has been

¹ And, I may add, partly quoted by the later *Nidāna* of Mādhava (AS., vol. i, p. 296, ll. 8, 9 = MN., p. 174, v. 4).

accumulating respecting the peculiar revising methods of Dṛiḍhabala, the balance of probability inclines towards the copy being on the side of the *Caraka Saṁhitā*; that is to say, that Dṛiḍhabala wrote the account in that *Saṁhitā*, copying for the purpose largely from Vāgbhāṭa I. The case seems to stand thus: Vāgbhāṭa I based his description of the humoral tumours on Charaka, and that of the blood-tumour on Suśruta (and, probably, other authorities). Supposing that he had found the blood-tumour described in Charaka, he would have utilized Charaka's description for his own account of that tumour, but he would not have copied it, as little as he copied Charaka's description of the humoral tumours. Rather the fact is that he found the blood-tumour ignored in Charaka, but described in Suśruta (SS., p. 804, v. 12); and so, according to his plan of compiling a *Samgraha*, or summary of the leading medical opinions of his time, he combined in his own account, in his own way, the doctrines of the two standard medical writers. On the other hand, Dṛiḍhabala, when he came to revise the pathological chapter of Charaka, noticed, of course, the total omission of the blood-tumour, and as in his time that kind of tumour had become an established item in the medical teaching on *gulma*, he proceeded to insert it into Charaka's account, largely copying for this purpose from the description which he found in the *Aṣṭāṅga Saṁgraha* of Vāgbhāṭa I.

This conclusion is confirmed by a comparison of the therapeutic chapters in Charaka and Vāgbhāṭa I. The relation of the two works to each other is shown in the subjoined Table II. It will be noticed that there is a difference in the method followed by the two writers. While Charaka keeps the therapeutic portion (vv. 18–61) distinctly separate from the pharmaceutic (vv. 62–164), Vāgbhāṭa I intersperses them. The two accounts, therefore, frequently overlap one another, and it is not possible, in

the Table, to do more than roughly indicate their mutual relation. Moreover, it must be remembered that it is the object of Vāgbhata I to present a Summary (*Samgraha*) of the medical doctrines of his own time. Accordingly the pharmaceutic portion contains also formulæ gathered from Suśruta (e.g., AS. ii, 93, ll. 7-9 = SS., p. 812, v. 103), Kāṅkāyana (e.g., AS. ii, 91, ll. 9b-13a, see C.CS., p. 341), Bheda (e.g., AS. ii, 91, ll. 21-5), and perhaps other authorities. On the other hand, Vāgbhata I studies brevity by referring the reader to other chapters, where the subject has already been dealt with (e.g., the reference to the chapter on *vidradhi*, AS. ii, 93, ll. 4, 11).¹ But the main point which I wish to make comes out clearly enough, namely, that Vāgbhata's account of the blood-tumour (AS., vol. ii, p. 95, ll. 8b-17) is an addition of his own, based on Suśruta; and that the account of it in Charaka is not an original part of Charaka's therapeutic chapter, but added on to it as an appendix by the revisor, Dṛḍhabala. Similarly, the Table shows that the introductory part of the chapter (vv. 1-17), to which there is nothing corresponding in Vāgbhata I, is also an addition made by Dṛḍhabala; made, in fact, as pointed out on p. 1007, from Mādhava's *Nidāna* and other, at present, unknown sources.

¹ For another similar reference see *ante*, p. 1014.

COMPARATIVE TABLE I (showing copyings).

CHARAKA.	DRĪDHABALA.	VĀGBHATA I.	MĀDHAVA.
<i>Nidāna</i> , (§ 1.) ¹ §§ 4-11. §§ 17-19. § 22.	ch. iii. Paras. 1-3. (Para. 5, ll. 2, 3.) ¹ Paras. 12-16. Para. 20. Para. 21.	<i>Aṣṭāṅga Saṃgraha</i> . <i>Nidāna</i> , p. 289, ll. 14-22. <i>Cikitsita</i> , p. 89, ll. 8-11.	<i>Siddhayaoga</i> . ch. xxx, v. 2.
<i>Cikitsita</i> , vv. 18-97. ² vv. 100-127. vv. 129-133a. vv. 137-156, 158. vv. 160-164. vv. 178b-182a.	chap. iii. vv. 1-6, 16. vv. 7-15, 17. vv. 98, 99. v. 128. vv. 133b-136. vv. 157, 159. vv. 165-167. vv. 168-178a. vv. 182b-184.	<i>Cikitsita</i> , ch. xvi. vol. ii, p. 95, ll. 8-17.	<i>Nidāna</i> , ch. viii. § 13.

COMPARATIVE TABLE II.

CHARAKA. CIKITSITA, ch. iii.		VĀGBHATA, vol. ii. CIKITSITA, ch. xvi.	
<i>Therapeutic</i> . vv. 18, 19. vv. 20-28. vv. 29, 30. vv. 30-42. vv. 43-46a. vv. 46b-61b. v. 61c.	<i>Pharmaceutic</i> . vv. 62-71. vv. 72-86. vv. 87-107. ³ vv. 108, 109. ⁴ vv. 110-130. ³ vv. 131, 132. ⁴ vv. 133-164. ³	<i>From Charaka</i> . } p. 89, l. 8-p. 90, l. 13. } p. 90, l. 14-p. 91, ll. 9a, 13b, 21a. } p. 92, ll. 2-22. } p. 95, l. 18. } p. 92, l. 23-p. 93, ll. 9b, 10. } p. 95, l. 19. p. 93, ll. 11, 12a. } p. 93, l. 12b- p. 95, l. 7a. } p. 95, ll. 7b, 8a.	<i>From other Sources</i> . p. 91, ll. 9b-13a (Kāṅkāyana). p. 91, l. 21b-p. 92, l. 1 (Bheda).

¹ Brackets indicate modified passages.² Verse 64a is certainly, and verses 82-6 possibly, spurious.³ Verses 98, 99, 128, 157, 159, are interpolated by Drīdhabala; also possibly verses 133b-136.⁴ These four are connecting verses (see p. 1011), two of which, 108a and 132a, are quoted by Vāgbhata I at the end of his chapter xvi.