been administered in conventional doses, the spirit of glyceryl trinitrate, stypticin, the oil of erigeron, various preparations of digitalis and iron, without effect. Periods of rest in bed had not prevented the recurrence of hemoptysis.

Taken as it now presents itself, the case has the features of a well-developed mitral stenosis with good compensation and a marked tendency to bronchopulmonary hemorrhage. This symptomatic manifestation of mitral disease, especially of mitral stenosis, is much more common than the text-books would indicate. In fact, most of them and some of the special treatises on diseases of the heart do not mention it at all. Among the more recent authoritative statements in regard to the matter are those in the article on mitral obstruction by the late A. E. Sanson,¹ and in James Mackenzie's remarkable monograph on diseases of the heart.² The former writer states, after calling attention to the fact that epistaxis is one of the earliest symptoms to attract attention in this form of chronic valvular disease, that hemoptysis has often been recorded and that it also occurs in the course of the lung affections in this disease, while the latter affirms that "at various stages patients may be seized with great bleeding from the lungs. Here doubtless the cause is the back-pressure in the pulmonary circulation and rupture of the blood-vessels." And he adds, "As a rule this is a grave sign, the patient dying sometimes shortly after an attack." I have never seen this accident and cannot concur in this opinion. On the contrary, hemoptysis in mitral stenosis, though often very alarming, is usually followed by abatement of the cardiac symptoms and sometimes by prolonged improvement. I have recently reported two cases which are interesting in this connection.³

A woman, 52 years old, the mother of four children, consulted me in 1906 for blood-spitting in small amounts, from which she had suffered for ten years. There were well-characterized signs of mitral stenosis. She had never had rheumatism, chorea or puerperal sepsis. There had been no habitual cough and there were neither symptoms nor signs of pulmonary tuberculosis. Tubercle bacilli were not found in the sputa. Her weight had risen from 136 to 150 pounds. She came again, Sept. 22, 1910, stating that she had been entirely free from blood-spitting until May 20, 1910, when she had a single copious bleeding amounting to "at least a quart." Since then she had been well. There were at this recent examination no pulmonary signs whatever and she had neither cough nor expectoration. The signs of mitral disease were the same as four years previously and she complained of slight dyspnea on exertion, but nothing else.

A Jewess, 45 years old, seen in consultation, was unable to recall any attack of rheumatism and regarded herself as well except for some shortness of breath on exertion, which she attributed to increasing weight. Coming home from the theater this patient was seized with profuse hemoptysis, which continued until the following day. There were no signs or symptoms of pulmonary tuberculosis and no tubercle bacilli in the clots, but a coarse presystolic thrill, a loud rumbling murmur at the same period in the cardiac cycle and absolute absence of cough or expectoration after the hemorrhage ceased, which it presently did, showed that it had been due to stenosis of the mitral valve. After several months this patient remained free from hemoptysis.

These hemorrhagic cases of mitral stenosis are very often erroneously regarded as irregular or obscure cases of pulmonary tuberculosis.

With reference to traumatism as a cause of mitral disease, and in particular of mitral stenosis, symp-

tomatic writers are even more silent. The authors in Allbutt's "System"⁴ make, however, the following very positive statement:

Traumatic influences occasionally give rise to the lesions of mitral obstruction. Indirect injury very rarely produces any changes in the mechanism of the mitral valve unless there has been previous disease, but direct violence, such as a blow on the anterior chest-wall, is not a very rare cause of the affection.

Bernstein,⁵ in 1896, collected the reports of cases of heart disease directly following traumatism, 124 in number, but a careful examination of this list shows a very limited number in which the valves were implicated and not one which presents the characters of my Case 1. Stern's monograph,⁶ "Die traumatische Entstehung innerer Krankheiten," contains a limited number of further cases of valvular disease, but none like this one. Riesman⁷ reported a case of mitral stenosis of traumatic origin in which the injury was indirect, being the result of violent exertion on the part of the patient in fleeing from footpads. In most of the cases reported the signs of valvular lesions have been attended by indications of acute endocarditis and in a large proportion the diagnosis has been established or confirmed by necropsy.

In the above case a leukocytosis of 16,600 at this late period and the evidence of a persistent, though gradually subsiding, congestion of the lower lobe of the left lung, probably associated with a low-grade chronic bronchopneumonia, may be invoked to account for the continuing blood-loss in connection with an advancing mitral stenosis.

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SALVARSAN IN PERNICIOUS ANEMIA *

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Miss E. V. (nurse) had been in California, where the diagnosis of pernicious anemia was made. Oct. 10, 1911, the blood examination showed a typical picture of pernicious anemia, with great numbers of megaloblasts, and all the other concomitant features. The red-cell count at this time showed 887,000. Physical examination was negative, except for slight cardiac dilatation. The patient had had large quantities of iron and arsenic before reaching the city. Oct. 10, 1911, 0.3 gm. salvarsan in sesame oil was given in the gluteal region by Dr. Tauber. This was repeated October 18. Hypodermic injections of cacodylate of iron, gr. 1, were then begun and were administered on alternate days, twenty-seven doses being given. The patient's improvement was rapid and, as can be seen from the table, she now presents no evidence of pernicious cachexia. Her diet has been meat-free with large quantities of buttermilk. The blood-picture is now merely that of a mild anemia. Details of the blood-counts can be seen from the accompanying table. It is, of course, too early to pronounce the patient cured; but the changes after the administration of salvarsan were certainly very striking.

Date	R. B. C.	W. B. C.	Hb.	Col. Ind.	Stain Spec.
10/10/11	887,000	7,200	20	1.1	Typical pernicious.
10/23/11	820,000	4,800	17	1.1	Large numbers of normoblasts.
10/31/11	1,000,000	6,000	19	0.8	
11/6/11	2,537,000	6,800	25	0.8	
11/20/11	2,670,000	8,200	45	0.8	
11/28/11	2,900,000	7,400	43	...	Very few indicated reds.
12/11/11	2,820,000	6,800	45	...	
12/21/11	3,200,000	6,400	52	...	

Salvarsan, 0.3 gm., in sesame oil each on October 10 and October 18; on October 27, iron cacodylate, gr. 1, hypodermatically, and every other day thereafter, twenty-seven doses in all.

4. Allbutt's System of Medicine, 1909, vi, 340.

5. Bernstein: Ztschr. f. klin. Med., 1896, xxix, 519.

6. Stern: Verhandl. d. deutsch. path. Gesellsch., 1908, xii, 172.

7. Riesman: THE JOURNAL A. M. A., Sept. 20, 1911, p. 1120.

* Reported before the Clinical Society of the Cincinnati Hospital, Dec. 21, 1911.

1. Revised by G. A. Gibson in the third edition of Allbutt and Rolleston's System of Medicine, 1909, vi, 366.

2. Mackenzie, James: Diseases of the Heart, 1908, p. 220.

3. Wilson, J. C.: Pa. Med. Jour., May, 1911, p. 590.