appraisal of symptoms were noted. Evidence of continuous ACTH stimulation of the adrenal glands was obtained by fasting eosinophil counts, made three times weekly.

For studies of respiratory function, the Collins respirometer was used. Each procedure consisted of at least three separate determinations, the patients lying in bed with their heads elevated on one or two pillows depending on their degree of dyspnea. The maximal determination of each procedure was selected for comparison. Arterial blood oxygen content and saturation were determined by Van Slyke manometric analysis or by the spectrophotometric technique of Hickam and Frayser.[3] Studies were made of all patients before and during therapy and of three patients also at varying intervals following discontinuance of therapy. For the determinations of beryllium levels of 24-hour urinary specimens, we are indebted to Mr. A. Poritsky of the Lamp Department of the General Electric Company. The method[4] involved the use of large volumes (800 cc.) of urine. After wet ashing, the centrifuged precipitates were dissolved in nitric acid. The beryllium was further concentrated by precipitation and centrifuging. The precipitate, which was still fairly large, was acid-ashed to rid it of any remaining organic material and the beryllium precipitated for spectroscopic analysis.

Determinations of the urinary levels of 17-ketosteroids were made for us by Dr. Ralph Dorfman.

TABLE 1.—*Initial Laboratory Studies (Control Period)*

	Case 1	Case 2	Case 3	Case 4	Case 5
Red blood cells per cu. mm.	5,180,000	6,900,000	6,090,000	5,800,000	3,620,000
Hemoglobin, Gm./100 cc.	15.1	19.7	15.9	16.4	10.9
Hemoglobin, %	97	127	102	105	70
Hematocrit reading, %	50	65	54	.....	35
White blood cells per cu. mm.	6,100	5,300	12,100	6,550	7,950
Differential percentages	Normal	Normal	Normal	Normal	Normal
Serum chloride, mEq.	.....	100	.....	.....	.....
Serum sodium, mEq.	141.2	142	.....	.....	135.4
Serum potassium, mEq.	4.22	4.2	.....	.....	4.59
Serum calcium, mg./100 cc.	10.2	10.9	10.8	10.1	.....
Serum phosphorus, mg./100 cc.	4.1	4.0	4.1	3.9	.....
Serum alkaline phosphatase, Bodansky units	6.9	5.4	6.7	.....	.....
Total serum proteins, Gm./100 cc.	8.2	8.4	7.5	7.4	.....
Serum albumin, Gm./100 cc.	4.7	3.6	4.4	4.7	.....
Serum globulin, Gm./100 cc.	3.5	4.8	3.1	2.7	.....
Electrocardiogram	Normal	Enlargement of right ventricle	Normal	Right axis deviation	Normal
Basal metabolic rate, %	+8	.....	+14	.....	+27
Results of urinalysis	Normal	Normal	Normal	Normal	Normal
Vital capacity, cc.	2,387	2,794	2,618	2,904	1,650
Fasting eosinophils per cu. mm.					
Control	310	255	158	196	.....
4 hours after 25 mg. ACTH	86	92	52	42	.....

REPORT OF CASES

CASE 1 (man, aged 36, University Hospitals no. 295-739).—*Industrial History.*—L. T. began working in a fluorescent lamp factory as a millwright on Nov. 17, 1939, continuing to Aug. 11, 1943, when he was inducted into the Army. Until Oct. 10, 1942 he was occasionally heavily exposed to beryllium-containing phosphors when it was necessary for him to clean the exhaust ducts that carried the effluent from the mixing room to the outside of the building. Other than this, his exposure was slight. He returned to employment on March 18, 1946 as a machinist, spending all of his time in the machine shop which was located in a separate room at a considerable distance from any of the lamp-manufacturing operations. He has continued in this work to the present time with the exception of 15 months from June 1, 1948 to Sept. 26, 1949, when, owing to the progression of his disease, he was unable to work.

Medical History.—He first reported to the company dispensary on June 15, 1948, stating that he had suffered from phlebitis in October 1947 and that this had been followed by weakness,

3. Hickam, J. B., and Frayser, R.: Spectrophotometric Determination of Blood Oxygen, J. Biol. Chem. **180**:457 (Aug.) 1949.

4. Cholak, J., and Hubbard, D. M.: Spectrographic Determination of Beryllium in Biological Material and in Air, Analyt. Chem. **20**:73 (Jan.) 1948.