During the investigations of cases of sepsis we discovered a distinctive disease pattern. It regards the publication of the clinical findings of a 38-year-old man (case 1), 36-year-old women (case 2) and 33-year-old women (case 3) with similar clinical findings and courses of their disease: disease duration 4-7 months, septic picture with pyrexia of 39.5°C and negative blood culture. Wasserman-reagent was negative in blood and liquor in all three cases. Moderate anemia, negative agglutination tests for typhoid fever, paratyphoid, Brucellosis, Flexner, Y and Weil’s disease. The disease began off with rhinitis followed by stomatitis, pharyngitis and tracheitis. Most noticeable is the involvement of the nasal mucosa with offensive crusting. The first two cases were complicated by a perforation of the nasal septum, which led to the formation of a saddle nose in the 38 year old man. The further course of the disease included renal complications, such as proteinuria and the urine sediment contained erythrocytes, hyaline and granulated cylinders. Esbach (Method for Estimating the Quantity of urine Albumin) ¼ to ½ per mill. No hypertension. Remaining Nitrogen 196 mg percent in the first case with signs of uremia. The third case developed anuria. The first two cases showed signs of pneumonia and a peculiar herpes-like rash shortly before death.
Post-mortem examination of the 1st case: Putrid necrotising changes of the nasal mucosa and sinuses with extensive destruction of the septum and turbinates (Fig.1). Ulcerating and necrotising stomatitis, pharyngitis and tracheitis with miliary nodules, both lungs show infracted areas with cavernous changes. Large multi-colored kidneys with washed out delineations and areas of bleeding.

![Fig. 1 Internal nasal space. Ulcerating defect of the nasal septum, extensive conchal destruction, wide communication with the space of Highmor, necrotising mucosal inflammation](image)

Microscopy: Fresh and old stages of periarteriitis nodosa were detected in gall-bladder, testes, epididymis, bladder, diaphragm, rectum, appendix, adrenals and the skin of the abdomen. The kidneys revealed periarteriitis nodosa changes and numerous glomeruli showed circumscribed necroses of the loops of Henle, in keeping with localized glomerulonephritis; there were areas of increased capsular endothelium with suggestion of half moon formation. The most noticeable features involving both kidneys diffuse were peri-glomerular granuloma, consisting of fibroblasts, which were arranged radially, and either interrupted or surrounded by polymorphic leukocytes, later increasingly by lymphocytes and plasma cells (Fig 2). Glomeruli within granu-
loma soon became partially necrotic (Fig. 3) or completely destroyed (Fig. 4). Alternatively they changed into loose completely or partially hyalinised connective tissue, permeated with cells of the granuloma (Fig. 5). The interstitial tissue was extensively infiltrated with leucocytes and lymphocytes, renal tubuli were found to be atrophic and numerous hyaline cylinders were observed. Within the nose (Fig. 6) there was cellular granulation tissue with granuloma-like perivasuclar epitheloid cell collections and nodular necroses. These were also observed in or below the mucosa of pharynx.
(Fig. 7), larynx and trachea. Both lungs showed necroses (similar to infarcts). Around their scarred edges there were severe vascular changes (Fig. 8) with destruction of the elastic elements and overgrowth of the intima. The character of these changes was similar to the artery changes in other organs.

In the second case we also observed putrid necrotising changes of the nasal mucosa and sinuses. Ulcerating and necrotising stomatitis, tracheitis and bronchitis with isolated barely noticeable nodules. Bilateral bronchopneumonia with circumscribed necroses. Multiple old infarctions of liver and spleen.
Microscopy: Similar to in the previous case we found generalized arteritis nodosa changes of gallbladder, liver, spleen, heart, stomach, duodenum, ileum, diaphragm and kidneys.

As in the first case the glomeruli show patterns of focal glomerulonephritis. Noticeably wide, loose connective tissue or hyaline zones surround numerous hyalinised glomeruli (Fig. 9) the latter often contain radial nuclear patterns. These granuloma are likely to represent and end- or repair stages in the context of prolonged re-

Fig. 6 Nasal mucosa. Granulation tissue with formation of nodules

Fig. 7 Hypopharynx. Nodular perivascular necroses with granuloma in the deeper layers of the wall
nal disease. The vascular changes described in the first case were also obvious in the proximity of pulmonary necroses. Nodular necroses and granuloma were also observed in the mucosa of nose, throat and trachea.

Third case: Post-mortem examination (cranium and sinuses were not opened) showed ulcerating and necrotising laryngitis and tracheitis with nodules. Both kidneys were enlarged, washed out demarcations bleeding and longstanding infarcts. In addi-

Fig. 8 Lungs. Extensive vascular changes with intima proliferation of granuloma-like tissue, elastica is partially destroyed

Fig. 9 Cellular zone composed of hyaline and connective tissue surrounding a glomerulus, possibly end stage of a periglomerular granuloma
tion, typical appearance of a patchy spleen (Fig.10) and bronchitis with isolated barely noticeable nodules. Thrombosis of liver and renal veins.

Microscopically the kidneys have the appearance of focal glomerulonephritis. Findings in keeping with periarteritis nodosa were limited to the spleen, here we saw fibrinoid and/or granulomatous vascular changes both within and outside necrotic areas (Fig.11). As in the other two cases we observed focal granuloma and necroses often in a perivascular location. Within isolated pulmonary artery branches we observed arteriititic changes with partial destruction of the vessel wall. Presentation of
theses three cases, with similar clinical histories demonstrate a unique and well circumscribed disease pattern, characterized by:

1. Septic course
2. Severe necrotising-glaucomatous inflammation of the interior nasal space (perforated septum in two cases). Larynx and pharynx also affected.
3. Renal changes in keeping with toxic focal glomerulonephritis
4. Generalized arteriitis following the pattern of periarteriitis nodosa

This disease has not been described before. The available literature only reveals a case published as borderline periarteriitis nodosa by Klinger (Frankfurt) Z. Path. 42,455 [1931] with similar extensive nasal changes. Within the framework of this publication a more detailed reflection of the peculiar renal changes in the first case, precise differentiation of the renal findings, the chronological order of the observed nasopharyngeal changes, sepsis and the relation to systemic responses is not possible and will be published later.

Discussion of the presentation

Herr Fahr (Hamburg): I thought the renal changes were most interesting in Herr Wegner’s communication. I believe we are dealing with toxic focal glomerulonephritis, which I have distinguished from diffuse glomerulonephritis on the one hand and Loehnlein’s embolic focal glomerulonephritis on the other hand. Experimentally this can be caused by Uranium, diphtheria toxin and sensitization reaction with animal protein. I have never seen toxic focal glomerulonephritis demonstrated more impressively than by Herr Wegener.

It was remarkable that there was and absence of hypertension, which could have been expected in view of such an extensive destruction of glomeruli. However, we also observe this apparent discrepancy in other forms of Bight’s disease. Hypertension may be suppressed by retention of pressure-lowering substances (Detonines) in
cases of necrotising nephrosis with anuria and uremia and in chronic glomerulonephritis with renal failure and uremia. Both explanations may be true for the presented cases with septic and uraemic presentation.

**Herr Aschhoff (Freiburg im Breisgau):** I am convinced that we are dealing with an independent disease. I am not convinced that there is periarteriitis nodosa.

**Herr Siegmund (Kiel):** These cases are undoubtedly special. In a very similar case, which underwent a post-mortem in Wuerttemberg (with endocarditis) no pathogen was found. A similar case from Kiel with vascular granuloma of the spleen, liver, lung etc. turned out to be Brucellosis.

**Herr Dietrich (Tuebingen):** Were there any hematological changes in the presented cases?

**Herr Schuermann (Berlin):** The disease pattern Herr Wegener presented appears to be an independent anatomically distinct disease, which concurs with my own observations. Clinically, nasal and sinus findings predominate over general symptoms of slowly progressive sepsis. In addition to the case of my student Klinger there is further known case by Hoffman (Inaugural Dissertation Hamburg) from Fahr’s Institute, and, as far as I can remember, another case published by Roessle. In Hoffmann’s case there were granuloma of the middle ear, which pointed towards Syphilis, the final diagnosis, or Rheumatism.

**Herr Fahr (Hamburg):** I would like to emphasize to Herr Aschhoff that I certainly consider the presented cases as independent disease, of which the renal changes are only one element.

In the case from my institute quoted by Herr Schuermann we thought of Syphilis considering the published cases by Stockenius, but it is unclear if that was correct. The extensive renal changes described by Herr Wegener were not observed.
**Herr Rix (Hamburg):** I too would like to report a case in this context that appears to belong to the disease Herr Wegener described in spite of some differences. Clinically there were predominantly extensive necroses of the nose, epiglottis and uvula. In addition there were epileitiform fits. Histological examination revealed extensive vascular changes in particular of vessels of the pia, but also other organs. However, in contrast to the presented cases there were not definite criteria for periarteritis nodosa. We interpreted this case as generalized obliterating endarteritis.

**Herr Fingerland (Koeniggrætz):** Over the last years I observed two cases Koeniggrætz with ulcerating stomatitis an extensive changes of the wall of the oesophagus. In the first case the oesophagus was completely denuded of its mucosa, in the second case we found ulcers extending over the whole esophagus. In this case they also included small bowel. In both cases ulcerative changes of the colon had caused complete mucosal destruction, thus the inner wall of the colon merely consisted of raw musculature. A few weeks prior to death of one case numerous focal, map-like hemorrhagic precisely demarcated areas appeared on the skin, which later ulcerated and opened up. Bacteriological and serological tests for Dysentery were negative. Blood count revealed marked Leucocytosis of 20 000 and 15 000. Histology of esophagus and colon showed arteriitis and periarteriitis. Renal changes consisted of groups of and focal fresh interstitial infiltrations. These fresh changes were much less predominant than in Herr Wegener’s cases. Liver and spleen show numerous millet size nodular coagulation necroses. I interpreted this as severe colitis. I think these and the other ulcerating changes are caused by arteriitis and periarteriitis that have developed. I note that in one case there was severe recurrent rheumatoid joint disease and that prior to death bleeding from nose and colon occurred. Although we did not perform a postmortem examination of the sinuses we can certainly assume ulcerative changes judging from the offensive odor and nasal bleeding.
**Herr Herzog (Giessen):** I would like to ask Herr Wegener if he took into glanders in to consideration. Although the acute form is more common in the human, occasionally we do see chronic glanders in the human, which is otherwise typically seen in animals.

**Herr Wegener (Breslau) (Conclusion):**

1. Neither case showed any blood film changes such as agraulocytoiss
2. We were able to exclude Brucellosis because of negative agglutination, absence of lymph node changes and of Brucellosis granuloma in liver and spleen
3. Numerous stains for Bacterium Burkholderia mallei / glanders were negative. Histological changes were different from those seen in glanders.