called into requisition, and by its means much help has been afforded, not only as to the size and position of certain of the sinuses, but also as to their actual pathological condition. That there is a great future for skiagraphy in its relation to morbid affections of the accessory sinuses cannot be doubted.

The relation of nasal accessory sinus disease to optic neuritis was discussed at the Exeter Meeting of the British Medical Association following the reading of a paper by Henry Manning Fish, of Chicago, who recorded a series of thirty-six cases of optic neuritis, in which series nasal accessory sinus disease was present twenty-six times and in which treatment of the sinuses was followed by improvement of the ocular condition in fifteen cases, including three bilateral cases in which the eyesight was restored to normal.

As would be expected, the submucous resection (Killian) operation for the relief of septal deformities has received a very large share of attention, and many papers have appeared dealing with the results of operation and the methods of technique. No modification of any real importance has, however, been suggested, and this method of procedure as originally advocated by Killian retains the popularity it so richly deserves.

Rhinologists are still much occupied with the problems as to how most effectively to deal with intra-nasal malignant disease, and it is to be hoped that in the near future more effective methods of treatment will be suggested than have hitherto been in use.

While much has been done of recent years in the matter of the surgical treatment of intra-nasal disease, much work remains to be done in the domain of its pathology, more especially in its bacteriological and cytological aspects.

RETROSPECT OF OTOLOGY.

By Dundas Grant, M.D., F.R.C.S., and Chichele Nourse, F.R.C.S.Ed.

The most important event for English otology during the past year has been the disappearance of the societies devoted to this speciality, which are now merged in the new Royal Society of Medicine. This cannot fail to have a great and beneficial influence upon the progress of Otology as well as upon all other special branches of medicine, demonstrating, as it will, both the necessity for their separate existence, and at the same time the

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inter-dependence of all the parts of medical science one upon the other.

At the Annual Meeting of the British Medical Association, held in Exeter, the discussion upon the treatment of chronic suppuration of the middle-ear, short of resort to the radical operation, was opened by a very valuable paper by Dr. Milligan, which is given at length on page 485, and by an interesting historical *résumé* by Dr. William Hill (502).

The Second International Congress on School Hygiene was held in London in August last (451), when several important questions regarding the hearing of school children were under discussion. Miss Frances Ivens, M.B., M.S., contributed a paper on "Ear Disease in East End School Children, based upon the Examination of 1000 Children" (451), in which she showed that nearly one third of them had deficient hearing. Dr. Alice Johnson (453) reported the "Results of Hearing Tests in Schools for Mentally Defective Children." Dr. Kerr Love (453) and Mr. Yearsley (454) dealt with the treatment of deaf-mutes.

Auricle.—At the Parisian Society of Laryngology, Otology, and Rhinology, two cases of othæmatoma were described by Dr. Castex (470), and one by Dr. Pasquier (471). A case of "Noma of the Ear" was recorded by Dr. J. Hechinger (547).

External auditory meatus.—A case of "Malignant Disease of the External Meatus" (22) was shown at the Otological Society by Messrs. R. Lake and W. H. Bowen. "Furunculosis" formed the subject of a paper by Seligmann (146). A case of "Multiple Neuro-Fibromata in which the Auditory Canal was Involved" was shown at the Austrian Otological Society (467) by Dr. Hammerschlag. At the Otological Society of the United Kingdom, Dr. MacBride showed a case of "Large Exostosis of the External Auditory Meatus" (243).

Membrane and ossicles.—At the Otological Society Mr. Hunter Tod showed a case of "Exceptionally Good Hearing after Removal of the Stapes" (33). Dr. Zalewski, of Lembourg (146), has been making some experimental investigations concerning the power of resistance of the tympanic membrane. The light bath applied to this structure has been found beneficial by Dr. Mancioli (477) in certain forms of dry otitis.

Acute otitis media.—At the Otological Society, cases of "Acute Otitis Media with Severe Symptoms, complicating Influenza," were recorded by Mr. Yearsley (25) and Dr. Tilley (23). "Otitis Media from Measles" was discussed at the Parisian Society of Laryngology,

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Otology, and Rhinology (155) by MM. Le Marc'hadour, Bruder and others. A case of "Otitis Media Hæmorrhagica" was recorded by Dr. E. Amberg (144), and a case of "Bilateral Otitis after the Nasal Douche" by Dr. Percepied (156). The treatment of otitis media by Bier's method of passive hyperæmia has been studied by Kopetsky (89), Keppler (234), and Frose (659). Terson (148) had an interesting paper upon "Paralysis of the Sixth Nerve complicating Otitis."

Chronic non-suppurative diseases of the middle ear.—Dr. N. Pierce (663) has written upon the present state of the question of oto-sclerosis, and Dr. Koerner (235) on the same disease in connection with heredity. Beck (658) uses metallic mercury for aural massage. Mr. Yearsley contributed a paper (510) on "The Value of Pneumo-massage in Middle-ear Affections." In chronic catarrhal deafness dionin is recommended by Dr. Randall (548).

Chronic suppurative inflammation of the middle ear.—At the Annual Meeting of the British Medical Association, Dr. Milligan (486) and Dr. W. Hill (502) opened a discussion upon the treatment of this affection. At the Otological Society a case of "Chronic Middle-ear Suppuration with Necrosis of the Labyrinth and Facial Paralysis" was communicated by Mr. Arthur Cheatle (152), and led to an interesting discussion (223). A case of "Middle-ear Suppuration, with Implication of the Chorda Tympani and Tympanic Plexus" was recorded (399) by Mr. Yearsley. Hoelscher (235) has reported "Four Fatal Cases after Purulent Otitis." Jack and Verhoeff (658) recorded a case of "Chronic Otitis Media with Fatal Hæmorrhage from the Jugular Vein." Dr. Wyatt Wingrave (403) has contributed an interesting note on the presence of spirochætæ and other throat-organisms in ear-discharges.

Facial paralysis.—At the Parisian Society of Laryngology, Otology and Rhinology, Dr. Lermoyez showed "A Patient affected with Facial Paralysis subsequent to the Removal of a Sequestrum of the Labyrinth," in whom anastomosis of the peripheral part of the facial nerve with the spinal accessory had been successfully carried out (160).

Mastoid diseases.—A case of "Primary Bilateral Mastoiditis" was recorded by Dr. Perry Goldsmith (660). Ryan (477) and Royce (661) contributed articles upon mastoiditis; and Langworthy (607) published a case of "Hysterical Mastoid Tenderness and Pain." At the Otological Society Mr. Lake (23) communicated a case of "Extensive Cholesteatoma of the Mastoid," and Mr. Hunter Tod a case of "Primary Tuberculosis of the Mastoid Process" (31).

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MASTOID OPERATIONS. — "Local Anæsthesia for Simple and Radical Mastoid Operations" has been discussed by Newmann (234). Knapp (145) inquires what cases require the radical operation, and Oppenheimer (279) has contributed a paper upon the operation. A case of "Radical Operation followed by Complications" was recorded by Harmon-Smith (146). At the Otological Society Dr. Milligan (195) read a paper upon a case of "Attempted Suicide after a Mastoid Operation," and a case of "Suicide following Bezold's Mastoiditis," which led to an interesting discussion. Mr. Donelan (221) communicated a case of "Chronic Otitis," in which he performed the radical operation; and Mr. Chichele Nourse (191) showed a case of "Radical Operation in which the Ossicles were left Undisturbed." At the British Laryngological, Rhinological and Otological Association Mr. Charles Heath showed a series of ten cases (63) illustrating "The Cure of Chronic Suppuration of the Middle Ear without Removal of the Drum or Ossicles or Loss of Hearing," and at a later meeting (76) a further series. Bryant (88) has published a paper describing a modified operation somewhat similar to Mr. Heath's. Vaseline oil as a dressing after the radical operation has been recommended by Dr. J. N. Roy (585). Dr. W. S. Bryant (204) has also written upon "The Conservation of Hearing in Operations upon the Mastoid." Meierhof has considered the prognosis of mastoid operations in diabetic cases (607).

At the Austrian Otological Society Dr. Ruttin described a case in which a cyst had formed after the radical operation (469); Dr. Urbantschitch (467) showed the result of "A Plastic Operation for Retro-auricular Fistula." At the Parisian Society of Laryngology, Otology and Rhinology Dr. P. Laurens (155 and 160) described his method of operating for retro-auricular fistula, and showed a case. "Post-operative Perichondritis and its Connection with *Bacillus pyocyaneus*" engaged the attention of Dr. Sarai, in Japan (145), and of Dr. H. Neumann (468) at the Austrian Otological Society.

Dr. Hinsberg (147) has written on "The Significance of Conditions found during Mastoid Operations in regard to the Diagnosis of Labyrinthine Suppuration."

LABYRINTH.—The last-named author (664) has also described "The Indications for Opening a Purulently Affected Labyrinth." Dr. von Török (476) has reported a case of "Caries of the Horizontal Semicircular Canal associated with Unusual Ocular Phenomena." Manasse (147) has dealt with "Chronic Progressive Labyrinthine Deafness." Viollet (663) discussed "Syphilitic

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Deafness"; Freytag (368) "Labyrinthine Diplacusis due to Syphilis." Siebenmann (654) has a paper on "Osteo-myelitis and Deafness"; Brock (658) on "The Function of the Semicircular Canals"; and Boenninghaus (607) on "The Theory of Sound-conduction." At the Austrian Otological Society Dr. Urbantschitsch recorded a case of "Ménière's Disease in a Hereditary Deaf-mute."

Extra-dural abscess.—One case has been reported by Mr. C. G. Lee (261), and one which was accompanied by paralysis of the sixth nerve and optic neuritis by Mr. Stoddart Barr (90).

Cerebral and cerebellar abscess.—"Our Faulty Methods of Brain Localisation in Intra-cranial Lesions complicating Aural Disease" is the title of a paper by Dr MacCuen Smith (664). Takabatake (608) has written on "Changes in the Eye-grounds in Otitic Diseases of the Brain"; and also (233) "On the Occurrence of Crossed Paralyses and Disturbances of Speech in Otitic Suppurations of the Brain and Meninges"; and Dr. T. K. Sidley (546) on "Otitic Brain Abscesses." "A Device found Effective in Securing Drainage of Brain Abscess" was described by Mr. T. H. Pinder (244). Cases of cerebral abscess have been reported by Professor Tanturri (660), Dr. Wiener (234), and Mr. Chichele Nourse (359); and cases of cerebellar abscess by Dr. L. B. Rawling (236), Dr. Cowen (146), Mr. A. L. Whitehead (108), Dr. Milligan (198), and Mr. Nourse (110). "A Case of Hysteria simulating Brain Abscess after Operation for Secondary Mastoiditis" has been recorded by Dr. Wiener (234). Dr. W. S. Syme (582) has contributed a paper upon a case of "Acute Suppuration of the Middle Ear complicated by Septic Meningitis and Brain Abscess."

Meningitis.—A case of "Death from Meningitis following Unsuccessful Attempts to Remove a Stone from the Ear" was placed on record by Dr. Schwartze (609); a case secondary to suppurative labyrinthitis was reported at the Otological Society by Dr. Milligan (29); and a case occurring after the radical operation, where the infection travelled along the facial nerve by Dr. C. N. Spratt (548). Dr. A. Knapp (657) published an interesting paper on "Otitic Meningitis."

Sinus thrombosis, aural pyæmia, etc.—Numerous cases have been published which illustrate the varieties in the course and result of otitic septicæmic conditions and the room for difference of opinion as to the treatment. We are probably approaching nearer to finality in the selection of the methods suitable for individual cases.

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Mr. Charles Lee narrates two cases of interest in which the disease, or at least its re-awakening, was attributed to injury. In the first (262) the child, the subject of chronic suppurative otitis, was accidentally knocked down, and on the following day had headache and pain in the ear followed after another day by symptoms of aural septicæmia. The sinus, when exposed, was found to be covered with blood-clot, presumably hæmorrhage resulting from the accident. The sinus was filled with "unhealthy-looking clot." It was cleared and left plugged for six days. In spite of this long retention the symptoms steadily subsided, and on the removal of the plug free hæmorrhage took place. Complete recovery ensued. In the other (265) the injury was a blow over the ear. The sinus groove was full of pus, but there was no communication between the antrum and the groove, therefore the extension was probably through the small veins. The infection extended downwards round the jugular, which was collapsed, and was ligatured as low as an inch above the innominate and excised. Death ensued from meningo-encephalitis. The writer deduces from these cases the conclusion that "ligature of the internal jugular is not always obligatory or even desirable when serious disease exists in the sinus." In Dr. Donelan's (271) case death occurred in spite of ligature of the jugular vein, with collapse of lung, small marginal pulmonary infarctions and pleural effusion. Dr. Donelan asks whether the ligature of the jugular was advisable. In an acute case Dr. Perry Goldsmith (661) found a semi-fluid yellowish clot in the lateral sinus. He is stated to have tied the jugular vein above the inner end of the clavicle and below the facial. The narrator attributes the recovery of hearing to his having retained the "bridge," and indicates an indebtedness to Mr. Charles Heath for this method. This excellent method is, however, the one long practised in all acute cases such as this. Dr. Stoddart Barr (96) gives a careful study of a case of "Septic Thrombosis with Death from Pulmonary Pyæmia." The sinus was cleared and the jugular tied. At the autopsy purulent thrombi were found in the lateral sinus, occipital vein, torcular and jugular bulb. It is not definitely stated whether the bulb was exposed at the operation. In another of Dr. Donelan's cases (103), in which the exploration of the sinus at the time of the mastoid operation had to be postponed on account of the threatened collapse of the patient, death took place, and one inch of the left internal jugular, its bulb, and the lateral sinus as far as the torcular were found thrombosed, but free from pus. The

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only apparent pus was a circular patch on the cerebellum on the opposite side from the mastoid disease.

Non-interference with the thrombus in cases of lateral sinus thrombosis is advocated by Voss (545). He exposes the sinus, avoiding palpation, and aspirates. If the diagnosis is confirmed he ligatures the jugular, excises the sinus, and cuts away the outer wall with scissors, leaving the clot. Jouty (366) in one case cleared the sinus and found pus on a piece of gauze which he pushed into the bulb. He left a gauze drain in the bulb. Recovery ensued, although the jugular was not dealt with. Neumann (468) gives a case of recovery, the sinus, the bulb, and the jugular having been opened. In two cases, one reported by Lewis (548) and one by Brandegee (146), death seems to have resulted suddenly from pulmonary or cardiac thrombosis. In neither had the jugular been ligatured. Kennon (146) dwells on the greater importance of the constitutional than of the local disturbances in regard to treatment.

"Primary Cavernous Thrombosis with Typical Signs" is illustrated by a case of A. Knapp's (608). The absence of ophthalmoscopic changes was remarkable, and confirmed Jansen's experience.

These reports show the importance of individualising in the selection of methods of treatment, and our readers will feel themselves specially indebted to those operators who have published these careful studies of their fatal cases.

Malignant disease.—An interesting case of "Epithelioma of the Tympanic Mucosa following Suppurative Otitis Media," was reported at the Otological Society (105 and 194) by Dr. Milligan. Dr. E. Botella has recorded a case of "Sarcoma of the Middle Ear; Operation; Cure" (660).

Miscellaneous.—A large mass of material has been published, which, although difficult or impossible to classify, is of considerable value. "Herpetic Inflammations of the Geniculate Ganglion" have been carefully studied by Dr. J. Ramsey Hunt (657), and Dr. D. G. Vail (236) has noted a case of "Herpes Zoster Auris." "The Effects of Fracture of the Base of the Skull upon the Auditory Apparatus" formed the subject of a communication to the Otological Society by Dr. Milligan (273), and a paper by Dr. W. Lange (546 and 609). Dr. V. Cheval (547 and 662) published a remarkable case of "Wound of the Brain by a Foreign Body penetrating the Ear, followed by Meningitis in which Operation led to Recovery." Dr. Freidmann (235) reported a case of "Objective Tinnitus in a

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Child," and Dr. Lermoyez (236) a case of "Entotic Tinnitus," on which he founded a paper upon "Noises in the Ear and Dechlorisation." Dr. Boenninghaus has described a case of "Bilateral Cerebral Disturbance of Hearing with Aphasia" (236), with which may be compared a case of "Periodic Central Deafness," communicated to the Otological Society (34) by Dr. Watson Williams. At the same Society Dr. Donelan analysed fourteen cases of "Marked Hypertrophy of the Pharyngeal Extremities of the Eustachian Tubes" (241). Dr. Le Beuf (35) has recorded a case of "Mutism in Typhoid," and Dr. Somers (545) has written on the "Aural and Laryngeal Complications of Typhoid Fever." Dr. Bárány (475) has studied "Reflex Ocular Movements." Dr. Schoenborn (607) reported a case of "Acute Cerebral Polyneuritis with Involvement of the Acoustic Nerve," and Dr. Withington (144) examined the hearing in a dozen convalescent cases of cerebro-spinal meningitis.

Dr. D. H. Walker has recorded "The Result of the Aural Examination of a number of School Children" (144). Dr. Suckstorff (145) wrote on "The Value of the Leucocyte Count in Inflammatory Diseases of the Ear, and in Otitic Complications." Dr. Bryant (279) treated of "The Preservation of Hearing." Dr. Dionisio (477) has been trying "Photo- and Radio-therapeutics in Chronic Suppuration of the Middle Ear."

Reviews.—The following otological works have been reviewed in the pages of the Journ. of Laryngol., Rhinol., and Otol. during the past year: "Operative Otology, Surgical Pathology, and Treatment of Diseases of the Ear," by Dr. C. J. Blake and Dr. H. O. Reik (90); "A History of Otology," by Professor Politzer (477); "The Labyrinth of Animals, including Mammals, Birds, Reptiles, and Amphibians," by Dr. Albert Gray (368); "L'Otite Moyenne Purulente Aigué et son Traitment," by Dr. G. Laurens (369); "Some Points in the Anatomy of the Temporal Bone from Birth to Adult Life," by Mr. Arthur Cheatle (419); "Chronic Progressive Deafness; its Diagnosis and Treatment," by Dr. A. Lucae (665); and "Diseases of the Ear," by Mr. Hunter Tod (666).

This is, in the main, the sum of the work in otology during the past year as recorded in the Journal; its inequality of distribution is no doubt partly due to varying interest in different disorders, but partly also to accidental circumstances, such as the material presented for study. As a whole it represents a continuance of satisfactory progress, and the gaps will doubtless suggest to our readers new and profitable fields of labour.

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